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See pp. 18, 20, 22, 97, 99 for catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 116

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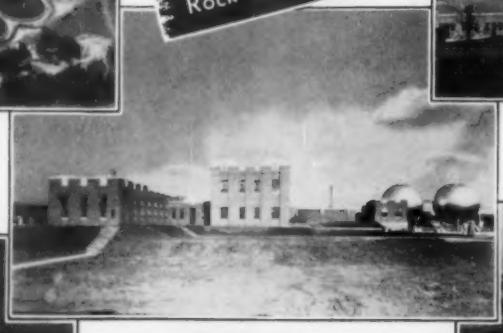

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Lessons from the Boston Night Club Fire

By ROBERT S. MOULTON
Technical Secretary
National Fire Protection Association
Boston, Mass.

THE Cocoanut Grove Night Club tragedy in Boston, which took nearly 500 lives on the night of November 28, is clearly due to gross violation of several of the fundamental principles of fire safety that have been demonstrated by years of experience and should be well known to everybody. It is too soon as yet to determine the responsibility, to evaluate the part that they may have been played by the chaotic condition of Boston's building laws, incompetent enforcement, political influence, and careless management, but the main lessons are clear.

A night club is essentially a place of public assembly in the same life hazard class with a theatre, but having greater possibilities of fire. As a result of the Iroquois Theatre fire in Chicago in 1903, when 602 people were burned to death, theatres in the United States are well regulated by fire laws. Automatic sprinklers are required over combustible stage scenery, adequate exits are required, and regular inspections to make sure that exits are free and unobstructed and that all fire precautions are observed. No such safeguards have been applied to night clubs, which are far more dangerous than theatres. Night clubs commonly are located in old buildings made over for the purpose, and practically every known rule of fire safety is violated. The Cocoanut Grove building was certainly no worse than hundreds of other night clubs located throughout the United States.

Lack of Proper Exits a Glaring Feature

The most glaring feature of this tragedy was the lack of proper exits. The National Fire Protection Association in its Building Exits Code, which is a well-recognized standard prepared by a representative committee of national experts, contains in its provisions on places of public assembly a number of basic requirements which, if observed, would clearly have prevented this tragedy.

Revolving doors have long been a menace even though of the so-called "collapsible" type. The N.F.P.A. Building Exits Code prohibits revolving doors as required means of exit in places of public assembly and further specifies that if revolving doors are used there must be a swinging door immediately adjoining or within 20 feet. In our opinion revolving doors should be prohibited in all places of public assembly. Reports indicate that there were other doors from this building which might have served as exits but which were locked, and one important door was hidden by drapes.

The basement lounge, where many persons perished, violated the fundamental rule that there shall be two clearly marked exits, so arranged that if one is blocked during a fire the other will furnish a safe path of escape. A clearly marked second exit from this room leading directly to the outside of the building, as provided in the Building Exits Code, would have saved many lives.

Combustible Material

The immediate cause of the start of this fire is unimportant and too much blame should not be attached to the boy who was responsible. With a large quantity of highly combustible decorative material, fire might have started from any one of a number of causes. The main factor was the presence of the combustible material in violation of the Building Exits Code which provides: "Paper and cloth decorative material should be kept to a minimum in places of public assembly, since such flimsy materials increase the hazard of the kindling and spread of fire." Combustible decorations can be flameproofed, but effective flameproofing requires careful treatment and at best no chemical treatment of combustible materials actually makes them fireproof. Some chemicals used for flameproofing may generate noxious smoke when heated and, according to reports, this may have been an important factor in this fire. The N.F.P.A. has published standards on the flameproofing of combustible materials but advises against placing too much reliance on such treatments.

Automatic Sprinklers Lacking

A standard automatic sprinkler system would have prevented this tragedy. A few sprinkler heads, opened by the heat of the fire, would have stopped the blaze in its incipiency. In the 50-year records of the National Fire Protection Association, there is no case on record where any major loss of life by fire has occurred in a building equipped with a standard automatic sprinkler system.

The Boston Fire Department apparently did excellent work in this fire. It clearly shows, however, the fallacy of relying upon any fire department, no matter how efficient, to prevent loss of life by fire in a crowded building. Even though the fire department is on the scene immediately, the fire fighters are largely powerless to rescue the helpless victims trapped inside.

Better Legislation and Enforcement Essential

As a result of this fire, there will doubtless be a wave of state and city legislation regulating night clubs. *It is indeed high time that these potential death traps are brought into line with the established fire safety requirements that have long been applied to theatres and other places of public assembly.* The Building Exits Code of the National Fire Protection Association, which dates back to 1913, is available as a guide for legislation which will require reasonable fire safeguards involving a minimum of inconvenience and expense to the operators. No legislation, however, will be effective in preventing repetition of such tragedies unless it is competently enforced without interference by political or com-

Congratulations to Kenney, Ill.

Director James M. Landis of the Office of Civilian Defense sent telegrams of congratulations on November 13 to Mayor Carl E. Fort of Kenney, Ill., first community in the nation to report every home qualified as a "V-Home," and to Governor Dwight H. Green of Illinois. State and regional OCD officials will join in celebration of the awards by the little mid-Illinois town today.

Requirement for the V-Home award by OCD are that the home cooperate fully in the war effort by providing proper protection against air raids, by conserving food, clothing, transportation, and health, by the salvage of essential war materials, by refraining from spreading rumors designed to divide our people and by buying War Bonds and Stamps regularly.

WAR needs the wires this Christmas

War can't wait—not even for Christmas. So please don't make Long Distance calls to war-busy centers this Christmas unless they're vital... BELL TELEPHONE SYSTEM

Our Municipal Notebook

Moving the Millions on Twelve Points

THE cities of the nation require of all their local transportation carriers increased efficiency and output in the face of unprecedented and fast mounting traffic and shortages of rolling stock, men, rubber, and fuel. Only through efficiency can the carrying power be found. This was the message of Edward A. Roberts, formerly of Fisk and Roberts, consultants, and President of Queens & Nassau Transit Lines, Ince., and now Associate Director of ODT's division of transit.

Passenger traffic is up 6 per cent in New York City, 40 per cent in Philadelphia, over 100 per cent in Savannah, San Francisco, and Oklahoma City, 200 per cent in Charleston, and 40 per cent for the country's average. To handle this growing load, there are the street-cars in the cities so fortunate as to have them, the trolley coaches, 44,000 city buses, 20,000 inter-city buses, and 94,000 school buses. Incidentally, all these buses use only 1/5 of 1 per cent of the requirements of all rubber-tired vehicles. Construction of all new street-cars and buses has been discontinued.

This is the present situation, like it or not. What's to be done is to carry out Joseph B. Eastman's twelve points to their ultimate and then take account of stock. The Office of Defense Transportation was established on December 18, 1941; its Division of Local Transit in February, 1942. When Mr. Eastman announced his twelve points, many thought them more or less stop-gaps. They were well devised, however, and are sterner necessities today than when promulgated.

They are susceptible of simple wording.

1. Stagger hours
2. Full use of rail lines and equipment
3. Divert passengers from bus lines to rail routes
4. Send alternate, not all, vehicles to the end of the line
5. Eliminate stops
6. Eliminate empty seats
7. No extensions or new routes
8. No charter-bus service
9. Make school buses available for industrial workers
10. Street traffic control to expedite vehicles
11. Revision of schedules
12. Use parkway roads for buses

Mr. Roberts pointed out that least achievement has been attained in street traffic control where many would expect the most. Mr. Roberts also described new types of mass carriers that have been developed for industrial workers. These unconventional vehicles using fewest critical materials include the haul-away truck which used to carry four to six automobiles, elongated passenger sedans consisting of a car cut in half with a 6-foot section inserted to seat 15 passengers at a conversion cost of only $1,000, the house-trailer seating 20 persons, a tractor-drawn vehicle for 125 passengers costing about $25 per passenger, and the stand-sit seat which saves 20 to 68 per cent space. None of these converted vehicles is likely to be permanently popular, though Mr. Roberts said they are comfortable and they certainly do carry people. That they are not jokes is proved by the fact that all the haul-away automobile trucks have been converted by the Coach Trailer Equipment Co. of Detroit to the number of 2,500.

In fact, none of the twelve points, with the possible exception of staggered hours, is likely to become peacetime transit policy, for they would dry up voluntary patronage. Out of all the striving, however, there should emerge a permanent cooperative view-point on the part of the public and their city officials toward local transportation that should encourage transit operators to give their best to an appreciative public.

Tires Without Tubes

THE plan and method of doing without inner tubes in existing automobiles, which has interested the entire country, was originated by John B. McGay of Tulsa, Okla. Mayor C. H. Veale of that city sends the photograph shown below with the news that Tulsa is the first municipality to adopt tubeless tires for city-owned cars.

The method is remarkably simple. The tire is taken off the car and the inner tube is taken out of the casing. A truck-type valve is inserted in the opening in the rim provided for the usual inner-tube valve. This truck valve, with lock nut and gasket on the inside and a lock nut on the outside of the rim, seals the opening. The casing is treated with liquid seal poured inside to form a film which fills any holes in the casing. The casing is put back on the rim, making certain that the bead of the casing is in contact with the rim. Inflate casing. That is all.

Hundreds of cars are already operating in this manner. Under the direction of the Petroleum Industries War Council, tests are being run with a thousand automobiles under different climates, temperatures, and conditions. When the results have been analyzed, a critical report will be issued.

Les Williams of the Tulsa, Okla., street department shows the mayor and city commissioners how a tubeless tire is working on the department's service car. Left to right are Mayor C. H. Veale; Water Commissioner W. F. Graham; City Auditor Milton W. Davis; Police Commissioner Thomas I. Monroe; Street Commissioner S. R. Smith; Finance Commissioner D. H. Pratt; and City Engineer W. R. Wooten.

A *Monument* TO CIVIC FORESIGHT

IN contrast to the thousands of municipal facilities which serve yet remain unseen by the community's citizens, storage tanks in water systems become an inescapable part of the landscape.

It is in combining utility with beauty that the leaders of many American communities have established monuments to intelligent, far-sighted planning. An example is the 2,500,000-gal. reservoir shown above—a vital link in the system which provides many citizens of Tulsa, Oklahoma, with water at uniform pressures night and day, yet a beautiful structure that will match tomorrow's surroundings as pleasantly as it does today's.

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Wartime Water-Works Operation

A treated wood overhead storage tank near a Pacific Northwest airfield

Overhead Storage with Treated Wood Tank

INDICATING methods that have to be adopted in order to conserve critical material, a wood water-storage tank has been constructed at a Pacific Northwest housing project adjacent to an air field. This 50,000-gallon wood tank has been built on a 75-foot tower. It was constructed entirely of untreated douglas fir. The tank lumber was of tank stock grade and the tower material of select common, with the exception of the caps and the 4 x 12 joists. The conical cover is constructed of one-inch sheaths on three-foot centers and two-ply roofing paper.

Concrete footings were used for the foundation of this tower, and standard pipe connections were furnished to tie this tower into the distribution system.

The tank was erected by the Federal Pipe and Tank Co., of Seattle, Wash., in accordance with this company's design.

Meter Reading

GLEN RIDGE, N. J., is experiencing marked success with its honor system water-meter reading plan introduced here several weeks ago. Under this plan, designed to save tires, gasoline, and manpower, the residents are asked to read their own water meters during three-quarters of the year with the water department representative making the fourth reading. Customers receive cards asking for information on the readings.

Manganese Control

AMONG the difficulties presented in the surface water supplies in Illinois is the problem of manganese. According to information from the Division of Engineering, Department of Public Health, most Illinois municipalities are able to eliminate the trouble by raising the pH of coagulation to around 9.0.

However, at Carrier Mills, Ill., this 9.0 pH was not sufficient. Operators there were forced to increase the pH to 9.4 and to keep chlorine residual of 0.3 to 0.4 parts per million in the mixing basin. The oxidizing action of the chlorine reduces the manganese to an insoluble form in the presence of the high pH causing the manganese to precipitate in the settling basin.

How the Home Must Cooperate with the Water Department

THE Medical Division of the Office of Civilian Defense has issued ten precautionary rules regarding water supply that should be followed in the home to protect family health. They are as follows:

1. **Keep available at least one quart bottle filled with drinking water for each person in the house.**
   Reason: Water service may be interrupted and may not be immediately restored.

2. **Always turn water faucets off everywhere in the house when water service has failed.**
   Reason: When water comes on, you may have forgotten about that open faucet upstairs. Water will be wasted, damage may result from flooding, and water pressure may be lowered over the city.

3. **Do not fill bathtubs with water following air raid alarms or during air raids.**
   Reason: Such action if taken simultaneously in many homes will seriously reduce water pressure in the mains and limit the volume of water. This would result in a dangerous lack of water for fire-fighting purposes.

4. **Leave valves alone.**
   Reason: Trained men will shut off all necessary valves.

5. **Remember that the water department knows the service is off in your area. Your telephone report is not necessary.**
   Reason: The air raid warden will promptly report troubles in his area. Telephones are needed for important official calls.

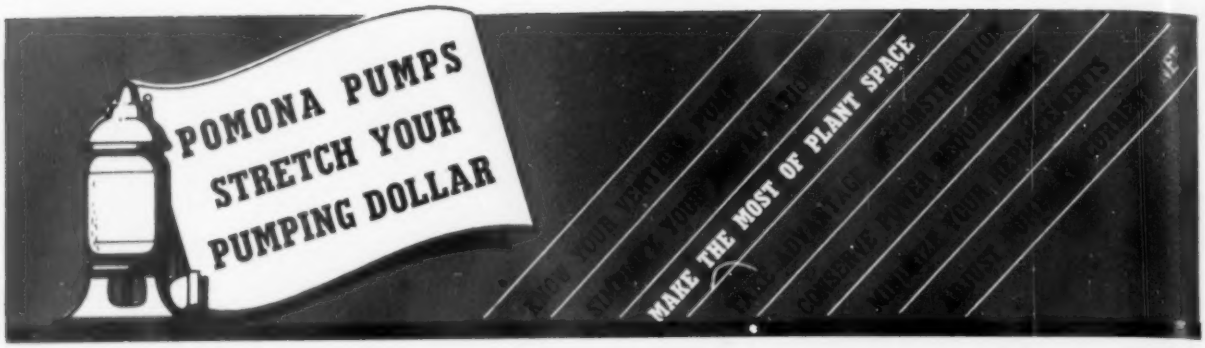
6. **Discontinue immediately the use of flush toilet when water service goes off. Follow the directions of the health department.**
   Reason: The small volume of water stored in the home is insufficient to continue flushing.

7. **Protect your health by boiling the drinking and cooking water if the health department so advises.**
   Reason: Disruption of water mains by bombing may draw sewage from sewers or house plumbing into the water main. It is advisable to boil all drinking and cooking water for five minutes during the first 24 hours after water service is restored.

8. **Accept chlorine tastes in your drinking water without complaining. It is a sign of safety.**
   Reason: Because of a water main break, or for some other good reason, the health and water departments may increase chlorine disinfection rates temporarily for your safety.

9. **Do not drink water obtained from other sources than your tap or drinking water carts operated by the authorities.**
   Reason: It is dangerous to use water of unknown quality from wells and springs when the public water supply fails.

10. **Do not believe or repeat rumors concerning water. The health authorities know the water supply facts and will advise you.**
    Reason: The origin of such rumors may be subversive. You can rely on your own health and water departments.



Pomonas Require only a Fraction the Space of Other-type Pumps

SAVE SPACE ON LOCATION: Check over your Pomona installation. It may be that it was simply set into the area occupied by your former pump with little thought given to maximum space utilization. Can you move your Pomona to an out-of-the-way corner—or into a space too small for other equipment—and thus gain added floor space for new equipment?

USE TOP-OF-TANK SPACE NOW WASTED: If your Pomona is not now located over the sump or tank from which it pumps, why not put it there? This space is generally wasted with other-type pumps because of their excessive weight and the difficulty of setting rigid foundations over a sump. But Pomonas need no heavy foundations—in fact, just two timbers anchored across the top of the sump is usually sufficient support for these compact self-balanced pumps. So by relocating your Pomonas over the sump or tank, you can gain solid floor space for other heavy-duty purposes.

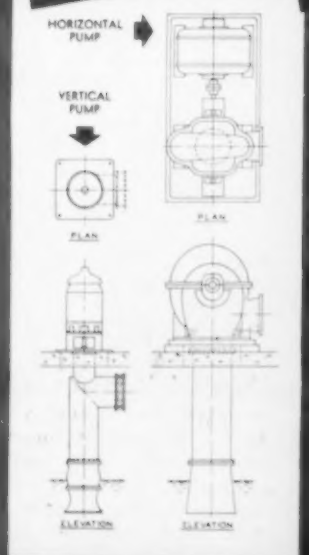
Make the most of this feature!

TODAY'S big problem is how to increase productive output with minimum expansion of plant space. Pomona Pumps not only pump water more efficiently at less cost, but they save 80% of the floor space required by other-type pumps of the same capacity. That's a BIG saving!

If you are now a Pomona owner, you already know the *many* savings Pomonas have made in your pumping costs. But it may be you can get still greater returns from your Pomona investment by taking fuller advantage of its space-saving compactness . . .

ELIMINATE SPACE-WASTING PIPING: Another important way you can save space with Pomonas is by running all piping either below floor level or overhead, thus leaving the floor space open. You can do this with Pomonas far more easily than with other types because their positive-lift characteristics eliminate need for a fixed level discharge in relation to pump position.

UTILIZE REMOTE LOCATIONS: Still another important space-saving feature of Pomonas is that the impellers are at water level and require no priming to start. This not only eliminates space-consuming priming equipment but—even more important—enables you to place Pomonas at remote out-of-the-way locations and operate them automatically with only infrequent attention. That leaves more floor space free in the center of the plant for equipment that requires the operator's constant attention.



Streets and Street Maintenance

Competitive tests for everyone, including common labor, enable Milwaukee to select employees on the basis of merit.

Competitive Tests for Common Labor

MILWAUKEE, WIS., claims the distinction of being the first large city to put its examination for common laborers on a competitive basis. This was first tried in 1925 and proved to be a great advance in the direction of efficiency over the old system of registering common laborers according to priority of application. During the depression the examination was suspended since it was found possible to fill the few vacancies which occurred in the Common Labor Service by the reinstatement of skilled craftsmen, inspectors, and others who were released because of curtailment of forces. The common labor examination was revived and somewhat revised during the summer of 1941.

Applications were distributed at all city wards for about two weeks, and applicants were called in groups daily for physical examinations, strength tests, and interviews on experience and work record. The applicants also were rated as to height, age, and weight. Out of 2,082 applicants, 1,273 appeared for examination and 984 were accepted. Eligibles are certified to vacancies in accordance with their standing on the list, following the same procedure used for clerical and other higher positions.

Drive-over Curb in Alliance, Nebr.

IN the construction of residential streets in Alliance, Nebr., the new type of drive-over curb and walk has been proving very popular. This design eliminates the need for special costly driveway construction. It still leaves a neat workmanlike curb and gutter to convey the storm water.

The city's street improvement program for last year included the construction of 9,789 lineal feet of curb and gutter with 17,280 square yards of gravel surfacing. The cost of the surfacing to property owners was $10,781.02, with $2,447 paid out of city funds for the surfacing of street intersections.

The concrete for this work tested 4,200 lbs. per sq. in. at 28 days. Wet burlap cure was used throughout the job. The concrete was mixed in a Jaeger two-sack mixer and the material proportioned by use of a Fairbanks platform three-beam scale. R. W. Andrews, City Engineer, was in charge. The work took two months to complete.

New Street Ordinance Facilitates Work

THE maintenance and construction of streets in Stratford, Conn., has been facilitated to a great degree by the adoption of a new street ordinance by the Town Council. The new ordinance, while following the pattern of its predecessor in many respects, outlines the sequence of construction details in such a manner that the work and expenses incurred by the developer are not nullified later by the installation of water, gas, or sewer mains, nor is the town burdened with the task or expense of reconstructing the street immediately upon acceptance.

Eighteen new streets were accepted by Council action during the year, and the status of older streets in various sections of town was clarified following acceptance by the Town Council. Previously there existed no record of official acceptance although the majority of these streets had been improved and maintained.

The driver-over curb and sidewalk in Alliance, Nebr.

795

CITIES

NAVY YARDS

WAR INDUSTRIES

ARMY CAMPS

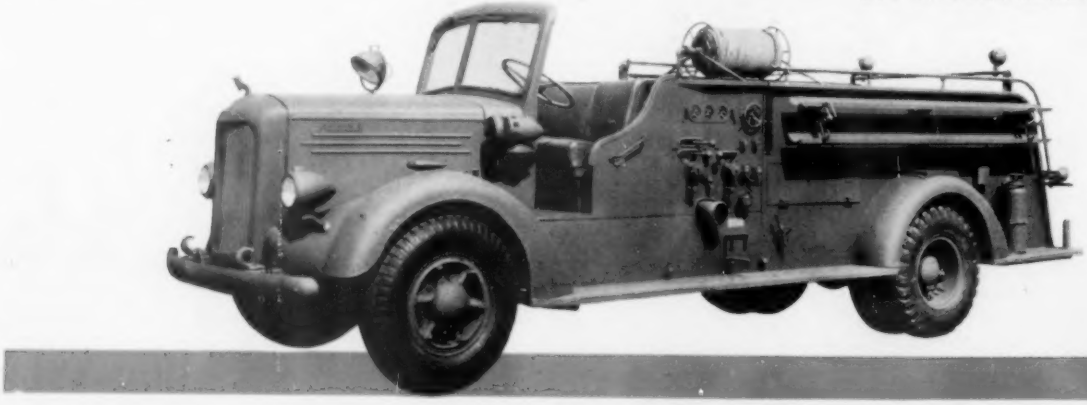
FIGHT FIRE WITH

When you see a Mack being built, you wonder if somebody has specified that it must last forever. When you study the standards each Mack must meet, you can understand why it takes the industry's greatest engineering and manufacturing resources to build a Mack. When you check things like Mack staying power on a pumping job, you can readily see that if you want to match Mack dependability, endurance, and performance you must first match Mack methods and skills in producing fire apparatus. So far . . . since 1911 . . . nobody has done so. And Macks keep right on getting better.

Mack

FIRE APPARATUS

BUY U. S. WAR BONDS



Here's a Mack type 80, 750-gallon triple combination pumper recently sold to Haddock Engineers, Ltd., for use at Camp Joseph J. Pendleton, Oceanside, California, Marine Training Center, the nation's largest military establishment, with an area of 141,000 acres.

The Mack Fire Apparatus line includes triple and quadruple pumpers from 200 to 1500 gallon capacity, hose wagons, city service ladder trucks, squad cars —comprising 14 distinct and specialized models. 70 convenient direct factory branches offer a quick, low cost answer to any and all service problems.

MACK MANUFACTURING CORP., FIRE ENGINE DIVISION, LONG ISLAND CITY, N. Y.

Sewerage and Sewage Treatment

Pasadena Costs Decrease Slightly

IN Pasadena, Calif., sewage-treatment costs involving screening, aeration, and clarification of the sewage amounted to $60,266 during the year 1941-42 compared with $61,435 for the previous year. On a unit basis this represented $17.15 per million gallons of treated sewage.

Total gallonage treated during the year was slightly less than that of the previous year. The decrease in flow was attributed to the lower rain fall. Peak flows reached a maximum of 20.23 million gallons as compared with 22.21 million gallons the previous year. During both years the peak flows occurred in the month of December.

The amount of revenue realized from the sale of fertilizer manufactured from sludge decreased slightly because of higher handling costs. Increased cost of sacks and labor also was a factor. Revenue from this source amounted to $74,625 compared with $78,988 for the previous year.

Treating Garbage and Sewage

VARIOUS difficulties have been noted when garbage is treated along with sewage in the sewage-treatment plant, according to a report by the Committee on Sewerage and Sewage Treatment for the American Society of Civil Engineers, recorded in the *November Proceedings*.

The Committee recommends that the garbage should be thoroughly and completely separated from other rubbish, both combustible and non-combustible. In cases where the plant is of activated sludge type, with dewatering or incineration of solids or drying for use as fertilizer, the Committee feels that the procedure of grinding garbage and adding it to a sewer or sewage works for dewatering the mixture is of doubtful value.

It was noted at Findlay, Ohio, that the B.O.D. and suspended solids increased markedly when ground garbage was added to the sewage. Grit also was quadrupled.

At Rock Island, Ill., Lansing, Mich., and Gary, Ind., the garbage is ground and added to the primary sludge. Some difficulties have been reported with bones, bottle-caps, and similar extraneous material. Ground garbage is mixed with either raw or chemically treated sludge and incinerated at Kaukauana, Wis., Conshohocken, Pa., and Ashland, Ohio.

Tests conducted at the University of Illinois indicate that ground garbage can be fed into the sewage influent of an Imhoff tank up to a limiting rate of 1½ tons per million gallons.

Wood Manhole Cover Developed in California

A NEW laminated wood manhole cover made from treated lumber has been developed by officials of Los Angeles County, Calif.

The cover is made in either hexagonal or circular shape. The hexagonal is 37½ inches in diameter and 32½ inches between opposite faces. Each of the faces is 18¾ inches in width. The entire cover weighs approximately 130 lbs.; 63.3 board feet of No. 1 common Wolmanized or creosoted douglas fir are required.

Col. Carl H. Reeves, superintendent, maintenance dept.; Alfred Jones, county surveyor and engineer; and Lee L. Page, senior road foreman, examine one of Los Angeles County's recently designed treated manhole covers. Each wood cover with its concrete frame saves approximately 500 lbs. of cast iron.

Wear and splintering is reduced by laying the laminated strips at 45-degree angle to the line of traffic, applying a thin coat of asphalt to the top, and covering this with sand or pea gravel. The frame for the manhole is constructed of concrete.

The plans were developed by Alfred Jones, county surveyor and engineer, and C. E. Arnold, chief deputy. The cost of the covers will vary according to locality, Mr. Jones points out. Lumber yards in the Los Angeles area make the covers at a low price because it is possible to utilize short pieces that normally would be discarded. The strips may be either nailed or bolted together or glued, using wood dowels and waterproof glue.

Preservation treatment of the wood by a pressure-impregnation process in accordance with American Wood-Preserves' Assn. standards is specified because decay and termite attack at the edges of the unit would reduce the safety and useful life of the cover.

According to Mr. Jones, the tremendous development in the unincorporated areas of Los Angeles County, accommodating new defense plants and defense workers' homes, has resulted in expansion of the county's sewer system. This type of cover has proved to be a satisfactory substitute eliminating the necessity for a large tonnage of cast-iron rings and covers. Officials consider them a temporary expedient and expect to replace them with cast-iron covers after the war.

Operating Data for Treatment Plants

IT IS as important for the small treatment plant as well as the large to maintain regular and comprehensive reports on operation, according to G. A. Hall, Assistant Engineer, Ohio Department of Health, in a paper delivered before the Ohio Conference of Sewage Treatment. In his opinion such reports serve as a guide for measuring the results, afford a means of comparing day to day performances, and help the operator to control his work by facts rather than by guesses. Furthermore, operating figures aid a municipality in case of complaints and law suits. Detailed reports offer substantial defense for the operator as well as for the municipality.

Mr. Hall emphasizes the following points as a general basis of operating data:

1. Daily flow recorded by use of recording meters, pumping rates, dosing tanks, or weirs
2. Daily weather records
3. The number of hours that the plant main, by-pass, or overflow operates
4. Record of the equipment actually in service
5. Settleable solids removed. (Imhoff-cone test)
6. With complete treatment tests of relative stabilization and dissolved oxygen upon the final effluent
7. Occasional tests of the stream showing relative stability and dissolved oxygen both above and below the plant outlet
8. Occasional 5-day B.O.D. tests
9. Determination of suspended solids covering a definite period
10. Reports on disinfection when used
11. The amount and character of digested sludge that is withdrawn
12. Total operating costs

OUR CHRISTMAS WISHES FOR YOU...

May your holiday be drifted high with gifts and giving, with happiness and friends.

May your Christmas be a brisk and cheerful island in this year's savage seas.

May your New Year be a turning point towards constructive, peaceful days.

May your 1943 be useful, busy, prosperous. May you find it crowned with Victory.

May you never forget our thanks for years of cordial dealings.

May you continue to understand our war-caused delivery problems, and may you, like ourselves, close soon the biggest, busiest, hardest year of your entire history.

MATHEWS HYDRANTS

400 CHESTNUT STREET, PHILADELPHIA, PA.

ESTABLISHED IN 1803

Made by R.D. WOOD Company

MANUFACTURERS OF SAND SPUN PIPE (CENTRIFUGALLY CAST IN SAND MOLDS) AND R. D. WOOD GATE VALVES

Refuse Collection and Disposal

Landfill Stabilization

STABILIZATION of landfills and decomposition of the material contained in them is hastened considerably if the moisture content in the fills is brought to a range of 40 to 80 per cent, according to Capt. Rolf Eliassen, Chief Sanitary Officer, North Atlantic Division of the Corps of Engineers, formerly Associate Professor of Sanitary Engineering, New York University.

"Knowing the original moisture content of the landfills," Capt. Eliassen states, "it is simple to compute the amount of water necessary to obtain this moisture content. The chief precaution is to see that the fill is not saturated."

The question of stabilizing old sanitary landfills also is worthy of consideration. According to studies made by Capt. Eliassen, the condition of the cover material is highly important. A pervious material might allow enough natural moisture in the form of rainfall to enter so that decomposition and subsequent stabilization would be accomplished. However, impervious materials, such as those used in most sanitary landfill operations will turn the water and prevent, or at least materially slow down, decomposition and stabilization. Here again it is important to make sure that the moisture content is no higher than 40 per cent.

Disposal of garbage and refuse by landfill operations offers timely outlet, since war work has restricted considerably the construction of incinerators. The Army is using landfills extensively to solve problems of refuse disposal.

Landfills stabilized carefully offer the possibility of utilizing the land for functional purposes thereby allowing a municipality to reclaim waste space.

Fewer Garbage Collections in Fort Lauderdale, Fla.

GARBAGE collection during 1941-42 has decreased by 8 per cent from the previous year, according to the report issued by A. J. Merrill, City Manager. Collections from residential districts were made twice weekly till June first when they were cut to only one visit per week. Collections were made in the business districts and from the restaurants and hotels daily throughout the year.

The cost of operations increased 15½ per cent because of the necessity for additional employees and the increased cost of labor. Garbage cans and trash are disposed of either by incineration or burial. For six months the department collected baled paper at a nominal profit, accounting for an increase of $5,746 in revenue over last year.

Refuse Segregation Assists Salvage Work

ENGLEWOOD, N. J., is attempting to educate householders to separate the garbage and refuse in order to facilitate salvage work. Instructions that have gone out to the people of this city are for them to obtain heavy, lined bags, similar to those used by grocery stores, in which to accumulate their various kinds of scrap. They may use this type of container for garbage, if the garbage is properly drained, to replace metal garbage cans. This is according to a statement issued by G. Russell Hartley, City Engineer.

"A large bag full of flattened tin cans, rubber overshoes, dolls, bottles, or other material of salvageable value," Mr. Hartley states, "will be much easier for the collection crew to handle and deliver intact to the salvage yard, which in this case is a part of the Public Works yard. Salvage work has become a part of the Public Works Department's duties at Englewood and is being encouraged by the Rotary Club in this city."

Changing Characteristics of Incinerator Refuse

RAPIDLY changing salvage operations have brought about complete changes in refuse characteristics in Lexington, Ky.

According to M. J. McGruder, City Engineer, refuse was becoming less and less dense prior to the advent of the United States' participation in the war. Immediately after December 7 the salvaging of paper and similar material had become so pronounced that operators were having difficulty getting enough burnable material to operate the municipal incinerators. As a result, they found it necessary to add coal and planing-mill waste in order to maintain fires. However, at the present time with the abandonment of paper salvage work the burnable garbage has increased by 15 to 20 per cent.

The incinerator in Lexington is a Nye, consisting of two 30-ton units burning as high as 10 tons of refuse per day.

Home Scrap 80 Per Cent Collected

THE recent scrap drive publicized so dramatically by newspapers throughout the nation has succeeded in unearthing 80 per cent of the available home scrap, according to War Production Board estimates. About 3,000,000 out of an estimated 3,800,000 tons available were collected chiefly through the efforts of municipal sanitation departments and other public organizations.

Estimates were based on surveys conducted by Dr. George Gallup, Director of the American Institute of Public Opinion. Proportionate representative surveys were made throughout the country to give results indicative of what Dr. Gallup feels is the situation if the survey were to have been conducted nationally. Only one family out of five still has scrap that could be contributed, and only one in ten has not been contacted by some local scrap committee.

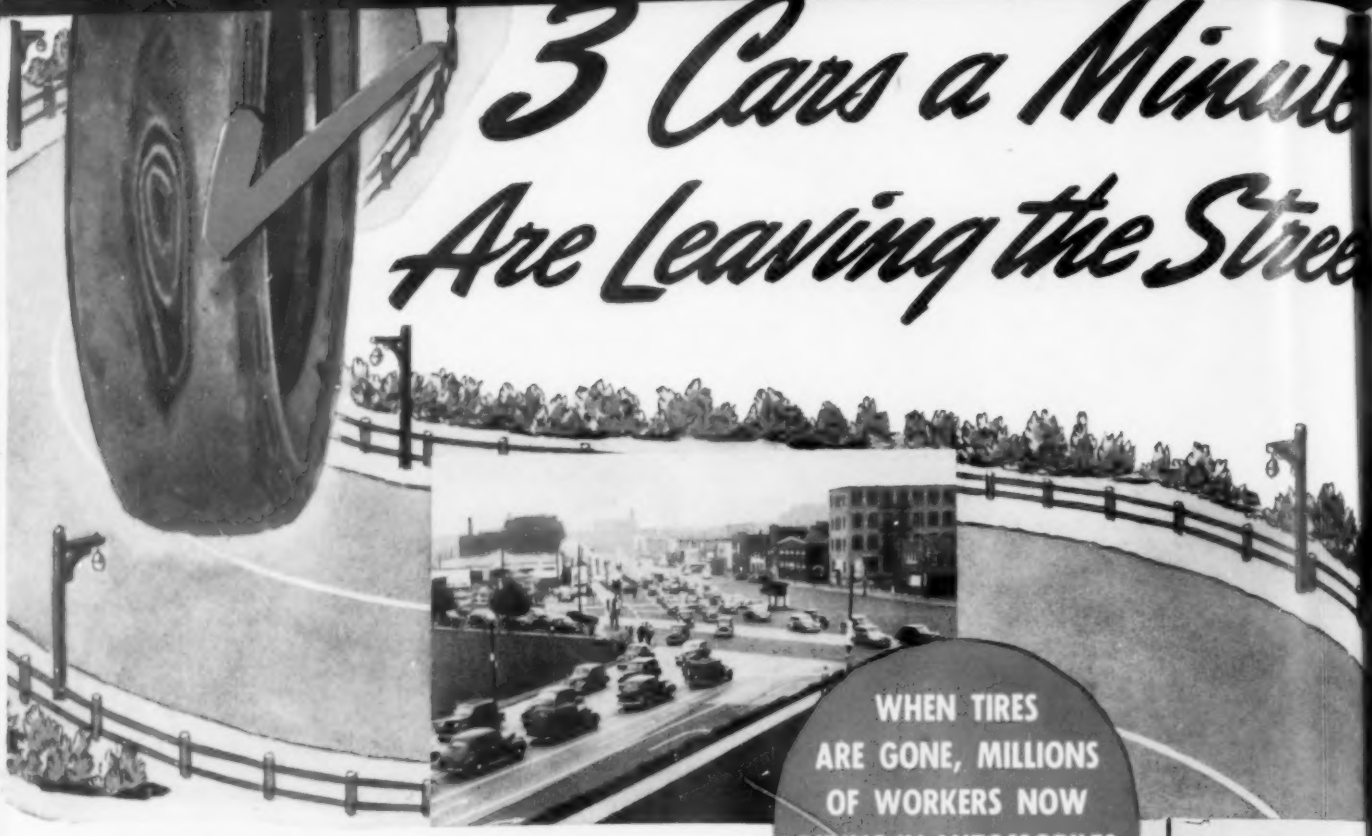
According to Reuben Braunstein, Research Consultant for the Conservation Division of the War Production Board, approximately 70 per cent of the regular movement of scrap comes from industrial sources. The other two most important sources are farms and automobile "graveyards."

Cans from Incinerators Not Suitable Scrap

THE practice of baling tin cans from incinerator residue and utilizing them as a source of scrap steel is being discouraged by the War Production Board. According to Alex Miller, Chief of the Iron and Steel Branch, very little tin is assembled from the cans in passing through the incinerator. This tin content is highly objectionable in the finished steel.

Mr. Miller states that the new detinning program can make available all new cans for detinning, thereby automatically eliminating the tin cans as an item in incinerator residue.

3 Cars a Minute Are Leaving the Stree



WHEN TIRES ARE GONE, MILLIONS OF WORKERS NOW RIDING IN AUTOMOBILES MUST DEPEND ON PUBLIC TRANSIT

That's WHY WORKING HOURS MUST BE STAGGERED NOW!

A STUDY of 16 representative cities reveals that 12 of them are already without any surplus capacity to absorb the inevitable increase in peak-hour transit loads.

A study of the general transit-vehicle situation reveals:

Transit needs	30,000 new vehicles
WPB authorized to date	9,750
Shortage	20,250 vehicles

These are the alarming facts of our critical transportation problem.

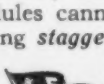
UNLESS WORKING HOURS ARE STAGGERED IMMEDIATELY, millions of war workers, deprived of their autos by the rubber shortage, will be unable to get to their jobs this winter.

Staggered hours is a simple plan which multiplies the effective use of available transit vehicles. Here's how it operates:

Everyone works the same number of hours as before, but starts and stops work slightly earlier or later than usual. Thus street cars and buses can make two or three trips to carry the people who formerly all wanted to ride at once.

Those cities that have already instituted *staggered hours* benefited immediately. In Kansas City, *staggered hours* afforded an increase in capacity equivalent to 42 new buses. In Los Angeles, thanks to *staggered hours*, buses became available for 18 new lines serving the big Lockheed-Vega aircraft plant. But unfortunately, most cities have yet to adopt *staggered hours*.

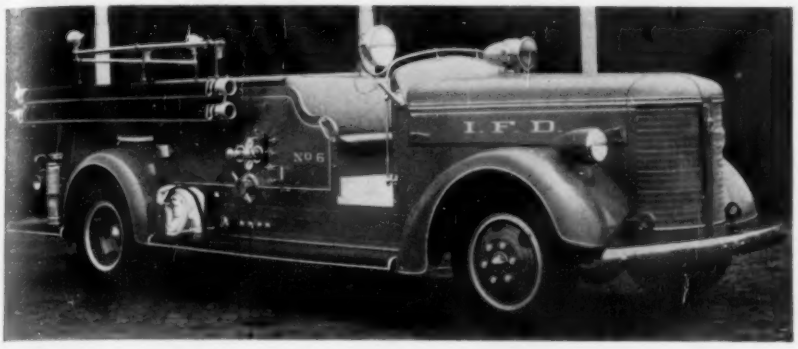
The need for immediate, nationwide action is urgent—the new schedules cannot be worked out overnight. Start planning *staggered hours* for your city TODAY. *General Electric, Schenectady, New York.*



The Navy "E", for Excellence, has been awarded to 92,780 General Electric employees in six plants manufacturing naval equipment

GENERAL ELECTRIC

Public Safety



One of Ithaca's latest pumping engines, an America-LaFrance 1,000-gallon triple combination

Uphill Fire Fighting in Ithaca

By B. J. Reilly
Chief, Fire Department

FOR all Ithaca's desire to remain a sequestered university town, there are industries which the fire department must protect in addition to Cornell University's numerous buildings. These are International Salt Co., Cayuga Rock Salt Co., Penn Dixie Cement Co., Ithaca Gun Co., and Morse Chain Co. There are also the numerous fraternity houses in inaccessible locations.

The business section of this city of 20,000 is on flat ground, and in three directions the streets climb on grades reaching 19 per cent. Three gorges 125 to 150 feet deep run through Ithaca, and many knolls and out-of-the-way places within the city add to the picturesque and the difficult. The terrain and character render the movement of fire apparatus particularly hazardous in winter. Despite the presence of two rock-salt sources, cinders and not salt are used on the hilly streets in winter-time.

In the seven fire houses are five triple combination pumping engines with booster on chemical tank, a 1926 city-service truck, and a 75-foot aerial about 23 years old. The pumpers are one new 600-gallon unit and one 1914 unit of the same capacity, one new 1,000-gallon unit shown here, and two 750-gallon units of the 1920's. All are equipped with Sterling sirens of 6 and 12 volts, and there are two Sirenlites. All apparatus is of American-LaFrance manufacture. There are also ten new ALF 5-gallon pump tanks.

Fabric fire hose is used exclusively. This type of hose, which is wax and gum treated hose to resist mildew and freezing, has been used here for about 30 years.

An entirely new Gamewell automatic fire-alarm system was installed in 1926, and over 90 non-interfering successive boxes cover the congested commercial and manufacturing locations. To the best of my recollection, Ithaca was the first city to install fire-alarm boxes in schools, long before the law required their installation.

Triple Protection at Lower Premium

KANSAS City, Mo., has tripled its insurance protection on municipal property—from $5,492,850 to $15,765,300—while reducing premium payments $5,400 a year, says the International City Managers' Association. A committee of insurance agents representing their local trade association sits in on settlements of claims and writes policies in the best suited companies. Formerly, the city placed its insurance business at random.

The plan was developed after the insurance agents' committee had studied and reported on Kansas City's insurance needs. Adoption of the committee's recommendations resulted in a cut of 50 per cent in the cost of automobile coverage, the writing of fire insurance on a coinsurance basis under which the city assumes some of the risk and three-year instead of one-year policies. Fire-insurance coverage on many fireproof buildings was reduced, and the premiums paid on fidelity bonds were lowered about 20 per cent by taking bids for the bonds.

Fire insurance for Kansas City now is written under extended coverage which includes practically every type of loss except war damage. Automotive equipment is insured for about $100,000 against fire and theft, and property damage and public liability insurance is carried in amounts of $10,000 and $20,000.

All insurance policies are filed with the director of finance, who reports losses to the chairman of the insurance committee. Settlements are made with approval of the department head involved, the law department, and the public insurance committee.

When the city needs new insurance of any kind, the facts are given the insurance committee, which makes investigation and writes the policy. Commissions on premiums are divided among members of the insurance agents' association and also with some non-members. All insurance agents must pay their city taxes before they can participate.

Assistance given the city by the public insurance committee saves the city one full-time employee, according to the city manager.

Incinerate Rubbish As It Accumulates

THE desirable method of taking care of waste paper, cardboard boxes, trash, and leaves is to have them collected at regular intervals and burned in a municipal incinerator. The next best scheme is to use this material as a fill or dump to reclaim waste land. In both cases the regular removal, either by private contract or through municipal service, is the really vital feature. Leaving this readily burnable material to collect in a house or store for periods of months is a definite hazard.

The rather common practice of burning this highly flammable material in a bonfire in the yard, even where there seems to be ample space, will always constitute a grave danger. The possibility of spreading fires from flying brands and sparks is ever present, but of even greater moment is the possibility of ignition of the clothing of women and children, when an open fire is used.

To provide for the destruction of this waste material in a manner which will be relatively safe, designs have been prepared for typical outside incinerators and will be sent to any municipal officials desiring them.

George W. Booth.,
National Board of Fire Underwriters,
New York, N. Y.

Keep Up-to-Date on New Equipment

Please check over the following list of interesting catalogs obtainable free of charge and either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying numbers below to indicate the catalogs you want, mail this coupon to The American City Magazine, 470 Fourth Ave., New York, and we will see that the catalogs are sent to you without expense or obligation on your part.

12-42

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Name ..... Position .....

Address .....

Water and Sewer-Maintenance Equipment

446. A new and attractive 48-page catalog, well-bound and excellently prepared, is being presented by Joseph G. Pollard Co., Inc., 142 Ashland Pl., Brooklyn, N. Y., describing water, gas, and sewer pipe line equipment. The information this booklet makes available is now particularly timely since it gives complete data on a wide variety of maintenance equipment. It has illustrations of units that will protect fire hydrants, thaw out pipes, clean sewers, locate leaks and buried pipes, measure flow, and test pressures.

Preventing Overflow in Standpipes

447. Catalog 41, issued by the Ross Valve Mfg. Co., Inc., P. O. Box 596, Troy, N. Y., has comprehensive material on valves to be used in water works that will be valuable to water-works operators. Of particular interest is the single-acting altitude valve that will effectively prevent overflow in standpipes or overhead tanks, or that can be used to control the head in washing and filtering through an open or closed mechanical or slow sand filter.

Chemical Mixing for Water Treatment

448. Developments in the mixing of chemicals for the efficient treatment of water are discussed in the new bulletin, No. 512, issued by Graver Tank & Mfg. Co., Inc., 4809-13 Tod Ave., East Chicago, Ind. Chemical mixing tanks may be manufactured in a number of shapes. However, this company recommends a cylindrical tank equipped with driving mechanisms, outlet swingpipe, agitator paddles, and perforated baffle plates. Chemical proportioners are also shown controlling the rate of chemical doses to meet the variation in volume of water entering.

Vacuum Filters

449. Bulletin 404 published by The Eimco Corp., Salt Lake City, Utah, gives a well-rounded discussion of all phases of vacuum filtration. While going into its use in the sewage-treatment field, it discusses as well how the equipment is utilized in metallurgical chemical processing and in other industrial fields.

Pump Data

450. A complete set of data sheets and bulletins has been assembled by The Aldrich Pump Co., Allentown, Pa., covering various types of pumps and hydraulic equipment. Comprehensive in nature, it gives not only illustrations and drawings covering these units, but also hydraulic tables and engineering information useful in solving problems relating to other installations.

Hot Process Water Softeners

451. Bulletin W-212-B2 entitled "Hot Process Water Softeners" issued by the Worthington Pump and Machinery Corp., Harrison, N. J., will be a valuable addition to the reference files of the municipal power plant operator and will carry interesting information for the municipal water-works operator as well. Design of deaerators, proportioning meters, and sludge removal arrangement will be of interest.

Protective Signaling Systems

452. Does your city have adequate emergency signaling systems for fire alarm, police signaling, air raid warnings, and other similar protective measures? If you would like full information on these protective signaling systems, such as is now being used in over 2,000 municipalities, write to The Gamewell Co., Newton Upper Falls, Mass.

Developments in Fire Hose

453. City officials will be interested in having full information on developments in fire hose construction that are explained in literature furnished by the Bi-Lateral Fire Hose Co., 20 N. Wacker Drive, Chicago, Ill. The resourceful design of this fire hose is claimed to double its service life and also decrease its weight so that 25 per cent additional load can be placed on the fire truck apparatus bed.

Controlled Flocculation

454. Bulletin 746, published by The Jeffrey Mfg. Co., 970-99 North Fourth St., Columbus, Ohio, contains information of real value to both water and sewage-works operators and of interest to city officials generally. It describes the Jeffrey Flocrtol process which produces flocculation in a shorter period of time and with a smaller chemical dosage than is possible with other types of equipment.

Maintaining Tapping and Drilling Machines

455. The Mueller Co., has assembled comprehensive and clearly-written data on how to maintain your existing tapping and drilling machines. If you want this information, drop a card to Dept. W-201 of the Mueller Co., Decatur, Ill.

Lock-Lid Street Washer

456. Water superintendents have for many years found valuable use for the Murdock Lock-Lid Street Washer in preventing small boys or mischievous adults from turning on the water and allowing it to run. The Murdock Lock-Lid prevents this. The same key that operates th estreet washer also operates the lock, thereby greatly reducing the possibility of loss or misplacment. Folders are available describing the Lock-Lid by writing to The Murdock Mfg. & Supply Co., 426 Plum St., Cincinnati, Ohio.

Dependable Gate Valves

457. Literature by The Ludlow Valve Mfg. Co., Troy, N. Y., describes their famous double-disc, parallel-seat gate valves developed and perfected over a period of three-quarters of a century. These valves assure easy operation and positive closure even after years in an open position.

Frost-Proof Hydrants

458. You may obtain bulletins and information on the Mathews Hydrant that is resistant not only to freezing, but also to troubles from ground-heaving. A built-in dead-air space and other carefully designed features make it particularly well suited to cold climates. Write to R. D. Wood Co., 400 Chestnut St., Philadelphia, Pa., for printed matter.

Accuracy in Metering Water

459. Present expanded uses of water make it increasingly necessary to to measure accurately not only large but small flows as well in order to use facilities efficiently. Literature offered by the Neptune Meter Co., 50 W. 50th St., New York, describes their Triden Compound Meter which fits exactly into the picture as a means of accurately measuring the volume of water delivered irrespective of the rate of flow.

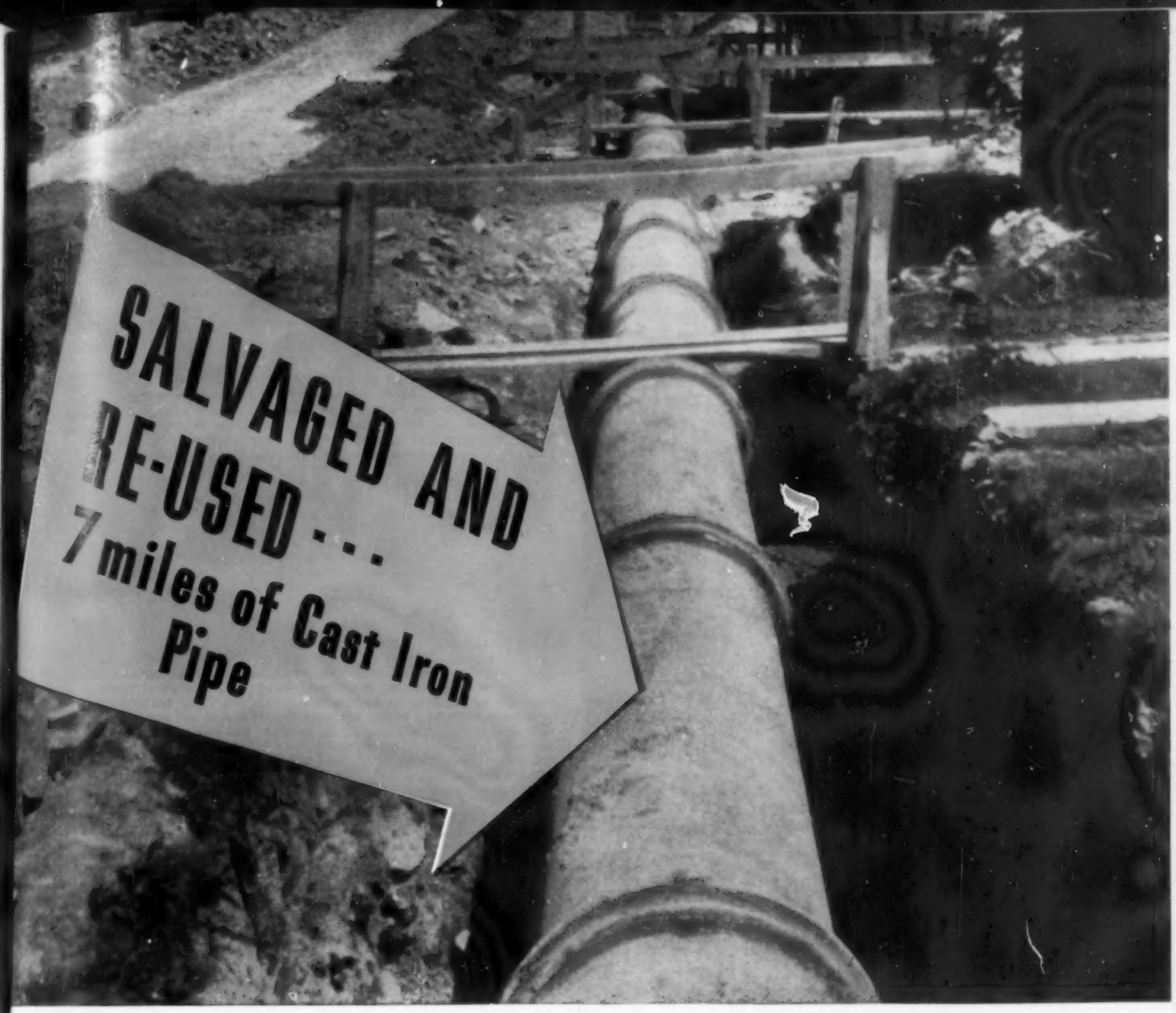
Motorcycle Police Protection

460. It is essential to keep motorcycle equipment maintained in top condition for the duration. To give you assistance in this work, the Indian Motocycle Co., Springfield, Mass., will send you available information that you will find extremely helpful.

Meters for the Duration and After

461. The fact that many metals are now difficult to obtain because of war production does not mean that the accuracy of the water meters manufactured by the Pittsburgh Equitable Meter Co., 400 Lexington Ave., Homewood, Pittsburgh, Pa., has been impaired. Literature that the company is ready to furnish gives complete details on their piston-type Empire victory meter and the disc-type Ironside meter. Both meters are thoroughly accurate and capable of giving many years of dependable service.

(*Continued on page* 20)



Relocated 36-inch cast iron pipe at Reading, Pa.

READING, PA. wanted the new highway even if it meant abandoning a seven-mile-long water main which had to be re-routed. The cost of a new cast iron line would have been approximately $350,000.

Fortunately, the original line was cast iron. It could be salvaged and re-used. It was. Seven miles of 30- to 40-year old cast iron pipe in 24-inch, 30-inch and 36-inch diameters were taken up, reconditioned and re-located. The taxpayers of thrifty Reading were thereby saved a large amount of money. This is a striking example of the salvage and re-use value of cast iron pipe. But there are numerous other examples in the files of the Cast Iron Pipe Research Association.

It is impossible to foretell future requirements or population shifts in metropolitan cities but any public official can be sure that, when water or sewer mains must be abandoned or re-routed, the pipe can be salvaged or re-used, *if it is cast iron pipe.*

Pipe bearing this mark is cast iron pipe.

TRADE MARK REG.

Available in diameters from 1¼ to 84 inches.

CAST IRON PIPE RESEARCH ASSOCIATION, THOMAS F. WOLFE, RESEARCH ENGINEER, 1015 PEOPLES GAS BUILDING, CHICAGO, ILLINOIS

CAST IRON PIPE

PUBLIC TAX SAVER NO. 1

PRIORITIES

and

Water Main Cleaning

● Do priority rulings on metals affect your water works? Will pipe, pump and tank purchases need to be postponed indefinitely?

Whether the answer is YES or NO, an important step for *any* water works is to check up on the existing mains, and wherever they are found to be clogged, put them back into condition to deliver their maximum flow by *cleaning*, using the well-known method which guarantees to restore mains to at least 95% of their original carrying capacity:

The NATIONAL METHOD

NATIONAL has the EXPERIENCE —
NATIONAL has the EQUIPMENT —

to meet all sorts of pipe-cleaning conditions — with cleaning machines and power-operated equipment, to take care of all sizes of pipe.

SO—don't let the priorities situation get you down! First try putting your mains in first-class condition by THE NATIONAL METHOD of water main cleaning.

The National Water Main Cleaning Co.

30 Church St. New York

Branches:

115 Peterboro St., Boston, Mass.
910 William-Oliver Bldg., Atlanta, Ga.
7103 Dale Ave., St. Louis, Mo.
3812 Castellar St., Omaha, Neb.
406 Fla. Theatre Bldg., Jacksonville, Fla.
205 W. Wacker Dr., Chicago, Ill.
501 Howard St., San Francisco, Calif.
2028 Union Ave., Montreal, Can.

WHICH OF THESE CATALOGS WOULD YOU LIKE?

(*Continued from page 18*)

Stopping Leaks in Concrete Reservoirs

462. Data in folder 590, issued by Inertol Co., Inc., 470 Frelinghuysen Ave., Newark, N. J., show how this protective waterproofing enamel can play an important part in water-works operations. Not only does it produce spotless surfaces, highly resistant to corrosive action, but it also has demonstrated its use as a waterproofing agent even in reservoirs holding water at relatively high heads. Typical specifications are included in the folder.

Single, Multi-Stage Centrifugal Pumps

463. You may obtain bulletins on the Manistee single-stage double-suction pumps, ranging in capacity from 75 to 20,000 gallons per minute, by writing the Manistee Iron Works Co., Manistee, Mich. Bulletins also are available on their multi-stage pumps ranging from 50 to 3,500 gallons per minute with heads up to 1,600 ft.

Keeping Tractors Working

464. A new comprehensive and cleverly written booklet, "Keep 'Em Working," has been published by Caterpillar Tractor Co., Peoria, Ill., to aid owners in getting the most from their machines. Supplementing Operator's Instruction Books, this booklet gives the reasons behind the maintenance and operation instructions and goes into greater detail on the care of certain critical parts. When writing for this booklet, request Form No. 7609.

Maintaining Electric Motors

465. Although the new manual issued by General Electric devoted to electric motor fitness is designed essentially for industries converted to war production, municipal officials will find many items in it that will be of value in their utility operations. The bulletin discusses such subjects as how to get the most service out of old and new motors, switching motors from one job to another, and equipping old machines with new motors. When requesting this bulletin write to General Electric Co., Schenectady, N. Y., and ask for Bulletin GED-1017 entitled "Motor Fitness Manual."

Advantages of Metal-Clad Switchgear

466. If you are interested in investigating the advantages of the enclosed metal-clad switchgear, you will find the new bulletin by Roller-Smith Co., Bethlehem, Penn., very helpful. Catalog 1110 describes the advantages that this type of switchgear has in safety, reliability, ease of installation, and maintenance.

Traffic Signs and Signals

467. Catalog No. TS140, prepared by the Dominion Signal Co., 12 No. Fifteenth St., Richmond, Va., will be especially helpful to city officials seeking guidance in the selection of effective signs, signals, license tags, badges, and other identifying material.

Cast-Iron Pipe

468. If you are confronted with special piping problems in your municipal plant you will find that engineers with the Warren Foundry & Pipe Corp., 1 Broadway, New York, will be able to give you valuable advice based on practical experience. Their experience with all types of cast-iron pipe and pipe fittings make them well qualified to assist you.

Manhole and Catch Basin Covers

469. Bulletin No. 20 issued by the Vulcan Iron Works, Inc., 327 No. Bell Ave., Chicago, Ill., regarding manhole and catch basin covers contains information of a type well suited for the reference libraries of municipal officials. This bulletin describes catch basin covers, inlet grates for both manholes and curb, gutter sidewalk catch basins, and many other types of openings. Illustrations and pertinent dimensions are also given.

Sewage-Treatment Equipment

470. City officials will find real value in the manual 6000 issued by Yeomans Brothers Co., 1409 No. Dayton St., Chicago, Ill. This bulletin not only gives clearly information on various types of sewage treatment, but also describes concisely conditions under which the various types operate effectively.

Concrete Airports

471. You will find helpful and educational data in bulletin R-147, prepared by the Portland Cement Assn., Dept. 11-4, 33 West Grand Ave., Chicago, Ill., and entitled "Design Data and Recommended Details for Concrete Airport Pavements." This bulletin gives complete and clearly written design information. Typical sections are shown illustrating construction details of fitting the work to the modern conditions requiring low steel content.

(*Continued on page 22*)

Official Navy Photo

"Jap Slappers"

NAVY MEN CALL THEM "P. T. BOATS"

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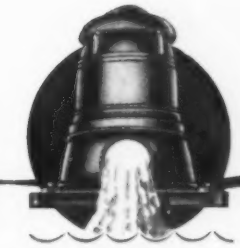

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REPAIRS and maintenance of municipal and private industrial Water System should not be neglected. The Layne Organization is endeavoring to service existing installations with necessary repairs and parts. If your wells and pumps need attention, you are urged to write, giving full details of your requirements. No obligation.

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75 Federal St., Boston

WHICH OF THESE CATALOGS WOULD YOU LIKE?

(*Continued from page 20*)

Developments in Sewage-Treatment Plants

472. Bulletin No. 6691C, issued by The Dorr Co., Inc., 570 Lexington Ave., New York, is particularly well designed to meet sewage-treatment requirements for small cities. This puolication, showing the details of the Clarigester, points out the advantages this unit has over the separate sludge digestion. The Clarigester essentially is a mechanical two-story tank operating similar to an Imhoff tank and is able to give treatment comparable to that obtained in plants having separate clarifiers and digesters.

Making the Most Out of Water Meters

473. Water-works men will find informative the new bulletin "Using Your Buffalo-made Water Meters to Best Advantage in Wartime" issued by the Buffalo Meter Co., 2902 Main St., Buffalo, N. Y. It gives valuable hints on how to use your meters to best advantage and how to maintain their life. Effective use of the meters, the bulletin points out, is one of the ways to conserve water and to reduce the need for additional pipe lines, pumping stations, purification equipment, and other costly construction.

Pipe Installation without Trenching

474. Bulletins available from the Hydrauger Corp., Ltd., Rialto Bldg., San Francisco, Calif., describe this company's equipment that installs pipe by boring. This method of underground pipe installation eliminates the necessity for deep and unsightly trenches. Unusually long runs have been recorded with the boring operations being conducted with a high degree of accuracy.

Threaded Cast-Iron Pipe

475. The McWane Cast Iron Pipe Co. will send you literature describing its threaded cast-iron pipe that is proving highly popular because of its corrosion-resisting characteristics and ability to withstand high pressures. You may obtain bulletins and information by writing the McWane Cast Iron Pipe Co., Birmingham, Ala.

Liquid Chlorine

476. Although chlorine still is available for public health services, it becomes necessary for all municipal operators to conserve supplies as much as possible. The Solvay Sales Corp., 40 Rector St., New York, supplier of liquid chlorine, has valuable information to be sent upon request on how to make chlorine go as far as possible.

Extra Strength Clay Pipe

477. The new colorful folder issued by the Clay Sewer Pipe Assn., Flannery Bldg., Pittsburgh, Pa., gives detailed data from federal specifications SS-P-361a covering both the standard strength and extra strength clay sewer pipe. According to the folder, this pipe develops approximately twice the strength of conventional clay pipe, making it suitable for use in the construction of airports, buildings, and other projects where the loads of pipe are extremely heavy.

Wartime Maintenance of Asphalt Streets

478. Valuable data are available from The Barrett Division of the Allied Chemical & Dye Corp., 40 Rector St., New York, describing ways to solve your road and street-maintenance problems under wartime restrictions. You may also obtain the new Barrett Tarvia Manual from the company giving many additional hints on street road work.

Pumps to Meet Water Supply Requirements

479. Literature on Peerless turbine pumps describes a wide range of pumps that this company manufactures. In turbine types the range is from 5 to 15,000 gpm. In other types the range is from 10 to 200,000. They come equipped in a wide range of drives. When asking for information to fit your particular requirements, write to the Peerless Pump Division, Food Machinery Corp., 335 West Ave., 26, Los Angeles, Calif.

Prolonging the Life of Street Flushers

480. Practical suggestions are available from E. D. Etnyre & Co., Oregon, Ill., on the maintenance of your street flusher. Write for assistance and information on repair parts to keep your equipment operating.

Sand-Asphalt Street Construction

481. New specifications prepared by The Asphalt Institute, 801 Second Avenue, New York, cover the construction of the hot-mix type of sand-asphalt base and surface courses. These are part of their construction specifications and are designated as A-5. Copies are available upon request to the Asphalt Institute. Specifications covering sand-asphalt road-mix are identified as RM-3.

Vol. LVII, No. 12 The American City December, 1942

Maintaining Essential Municipal Services Under Priorities System

By Albert Pleydell
Commissioner of Purchase
New York, N. Y.

EARLY in the summer of 1942 the City of New York foresaw the need to coordinate and head up its departmental planning, specifying, and requisitioning of new material and equipment and then to coordinate its purchasing with the policies, convenience, and needs of the War Production Board and other federal agencies.

Clearly, essential municipal services must continue to function with no letdown in genuine efficiency. The Federal Government wants that. Clearly also, least critical materials must be (1) known, (2) studied, and (3) used wherever they will serve. Finally, where standard manufactured products such as water, sewage, and electrical equipment must be obtained to forestall inadequacy or breakdown, the request for priority should be made by a Washington-known city-authorized individual in a fully-informative but time-saving manner.

Preview of Any Request for Materials

On June 25, 1942, the Board of Estimate adopted a resolution requiring that:

1. All requests for approval of contracts involving new materials be submitted to the Budget Director or to the Chief Engineer of the Board.

2. If the request is found to involve products requiring federal approval, it shall be forwarded to the city's authorized representative* whose job it is to apply for federal approval.

3. A City Priorities and Allocations Board shall be established, consisting of the Director of the Budget, the Commissioners of Purchase and Public Works, the Borough President of Brooklyn, and the Comptroller as Chairman. The Department of Purchase was directed to establish critical lists of materials, available supplies of which appear to be below the normal city consumption or which require high priorities to obtain.

Albert Pleydell

The City Priorities and Allocations Board (CPAB) has the power to require departmental inventories of materials and equipment, to regulate or prohibit the use of critical materials, ration their use, and transfer such materials from one department to another. The exception is that the need for materials for medical purposes must be discussed with the Commissioner of Hospitals.

Department Head Must Make Request

Requisitions for items on the CPAB critical list, whether stores withdrawals or direct purchases, must bear the following certificate signed by the department head or his deputy, not by requisitioning clerks:

CERTIFICATE

Request for Critical Material

I hereby certify that the item (s) above requisitioned is (are) absolutely necessary for the maintenance of essential services. To the best of my knowledge there is no other material that can be used for the purpose.

Signed .....

Title .....

This important New York City purchasing story should furnish valuable pointers to cities and towns of all sizes throughout the country. It is a qualitative not a quantitative story. In the matter of critical materials and equipment, the city first set its house in order and arranged to keep it so by setting up a City Priorities and Allocations Board which operates through a series of orders. The first is a Limitation Order which says, for instance, that cheesecloth is purely an item for medical use or paint testing and cannot be used to wipe off desks or to strain oil. The second is a Conservation Order which means "Go easy; this is all there is; you can't have more of this item after you have used up what we now have on hand." The third is an Impounding Order which freezes any material or equipment in any stock, whether in general stores or in a department. CPAB undertakes to obtain all WPB preference ratings by observing intelligently the spirit and letter of federal rules and requirements.

* This representative is the CPAB, acting through L. J. Cook, chief of its Priorities Division.

A Department's Stocks May Be Impounded

The Director of CPAB is Dr. Paul John Witte. He has authority to impound or prohibit the use of critical items already stocked by any city department. When that action is taken, the department must make official application for the use of the materials as if they were in the general stores of the city, except in cases of emergency.

Critical materials include surplus and obsolete equipment which have been inventoried and must be surrendered to CPAB on demand.

Since August 1, it has been required that all applications for preference ratings, rationing certificates, or allocation allotments requiring federal approval must be submitted by the department through CPAB except:

Contracts which require the approval of the Board of Estimate
- (a) involving the use or acquisition of materials
- (b) for construction or repair
- (c) for final authorization of assessable improvements

Projects which require a certificate from the Budget Director.

The above are submitted through the Budget Director or chief engineer to the city's federal representative. Projects requiring State Highway Department approval are submitted by the department directly. Except in the case of the above projects, new work involving the use of impounded items must not be initiated without CPAB approval.

Flexibility, Not Bureaucracy

It should be obvious that this procedure has been set up to get things done and not to slow down essential operations. In an emergency, the head of an agency may use impounded items in his department or those in some other department with the consent of that department head.

The first part of our system aims at making the wisest use of existing stocks and stores by treating them as scarce and valuable products difficult or impossible to replace. Except in the case of critical items, the using departments proceed as usual, issuing stock requisitions or purchase requisitions for non-critical materials. The city buyers make such purchases as usual, but when a buyer finds that a requisition calls for any impounded materials, it is sent to CPAB for action. No requisition for equipment over $25 gets this far unless it has been sanctioned by the Director of the Budget, whose approval is contingent on the report of CPAB on ability to furnish from stock or to obtain an adequate priority rating. The first step of CPAB is to send an engineer to inspect the need for the critical material. If it is manila rope that is wanted, why will not sisal rope serve? If lacquered wire, why not ordinary insulation?

The second step is to refer the requisitions to a committee of these five experienced technical city officials: Nicholas J. Kelly, (chairman) chief engineer of division of light and power of the Department of Water Supply, Gas and Electricity; William H. Latham, park engineer of Department of Parks; Harry W. Levy, principal assistant engineer of Office of President of Borough of Manhattan; Lawrence J. Kuhne, mechanical engineer in Comptroller's Office; Dr. John Grimley, deputy commissioner of the Department of Hospitals. These men are not only familiar with the necessary uses of the materials involved; they are competent to pass judgment on their proper allocation among the services of the city.

Upon this committee falls the responsibility of determining the apportionment of limited supplies, even though this may mean denying items to certain services and granting them to others. The importance of the service to the community is the sole criterion. When this committee approves a requisition, and the director of CPAB confirms the approval, it is sent to L. J. Cook, Chief of CPAB Priorities Division, the division which takes care of all matters requiring WPB, OPA, ODT, or other federal action. If no federal action is needed, the director authorizes the release of stock material or the purchase of new.

Seeking the Priority Rating

If the requisition is for materials and equipment for a new project or a large maintenance and repair contract involving critical materials, the using department is required to submit a bill of materials and a description of the work to CPAB—which informs the Budget Director or chief engineer of the Board of Estimate of the federal action required, and furnishes the appropriate federal forms in blank. These forms filled in by the using department are filed with WPB in the name of the City of New York (CPAB) for the using agency. Thus all correspondence and follow-up take place through CPAB, which is in accordance with the federal system of marking applicants. Every application to Washington is accompanied by a return postcard shown here, requesting a case number. When ratings are received for projects, a copy of the preference rating order and instructions for its use are sent to the using agency.

Applications are filed on:

PD 333, emergency assistance
PD 200, projects

CASE #.....

Applicant's Ref. #.....Date of Application....

War Production Board:

Please supply case number in the blank space above in accordance with W. P. B. release # 1490.

City of New York
Priorities and
Allocations Board

Form No. PA-20

Application for case number.

PD 1-A, materials, supplies, equipment
PD 3-A, maritime services
PD 300, maritime services stock
PD 25-A, quarterly requirements

The supplier of the products advises what rating is necessary in order for him to replace and not sell himself out of business. This is the rating which must be obtained; all lower ratings are useless and a waste of everybody's time.

PD 1-A

On PD 1-A applications, complete information is obtained from the using department as to use and actual need, amount on hand, previous consumption, alternates and substitutes that could be used —in short, why the material or equipment is necessary. If replacement equipment, why won't existing equipment serve for the duration? From the facts the PD 1-A application is prepared and forwarded to Washington with the return postcard.

The PD 333 emergency priority assistance was established by WPB to enable applicants to take care of breakdown or imminent breakdown. Information is taken by telephone from the using agency and confirmed by letter next day. For amounts under $500, the application is filed with the local WPB office if a rating not higher than A1-A is required; over $500 and for higher rating, the application is sent to Washington.

Applications for rationing certificates for tires, sugar, gasoline, footwear, fuel oil, and coffee are also handled on a city-wide basis.

Meeting Federal Requirements

Through a study of WPB orders, the blanket ratings available under P43, P46, P123, P129, have been interpreted in a set of office instructions for the staff of the Department of Purchase. The use of these ratings, within the limitations imposed, have become procedure automatically followed by our city buyers. Some of the pointers given the staff regarding the use of rating plans are:

Do not approve a transaction until the priority has been obtained or unless you are certain a blanket rating is applicable. Ask for a rating only on jobs you know should go through. In making an application, the main point is to establish need. It is not sufficient merely to state that the products are required by a hospital or a pumping station. Why are they required? Don't state "as per sample" or "per specification" unless you attach a copy. Don't say "as per Catalog Number" without the catalog, or "Page ... of THE MUNICIPAL INDEX," without attaching the page and getting another copy of the INDEX for yourself. Don't put steel and brass in the same application. Make separate applications for steel; copper; brass and bronze; lumber; elevator parts; office supplies; drugs and chemicals; surgical and medical supplies.

WPB orders and forms are primarily designed for industry use and frequently do not clearly apply to municipal operations. Although the CPAB endeavors to furnish all data specified in the application forms, difficulties arise from time to time because of the aforementioned industrial design of the blanks. Also, members of the WPB staff frequently request information beyond that specified in the forms. In such instances, effort is made to clear the matter by correspondence, but if this fails Mr. Cook visits Washington to consult personally with those individuals handling the applications.

From time to time, orders issued by WPB adversely affect essential services of local governments. This situation is usually traceable to the fact that the orders are primarily intended to cover industrial problems. CPAB, through Mr. Cook, brings such cases to the attention of the Bureau of Governmental Requirements and offers suggested improvements. It cannot be stressed too strongly that in giving such advice CPAB tries to present the overall problem of local government and not just the specific problems of New York City.

WAR'S LIGHTER SIDE AS SEEN BY "LOCAL GOVERNMENT SERVICE" CARTOONIST

"Mummy—I liked them much better before the war, when they were in Technicolor."

"Tell me again you love me, George—it leaves me so cold!"

These sketches are reproduced from the September 1942 issue of "Local Government Service," official journal of the National Association of Local Government Officers (London); and are accompanied with the following note:

"Readers will remember Jack Carver, of Walsall, whose brilliant pencil and shrewd humour enlivened our pages before and in the early months of the war. He is now in India with the R.A.F. and recently sent the two sketches by airgraph from there."

Guarding a City's Health with Sewage Treatment

Tifton, Ga., Overcomes Unusual Sewerage Problems in Three Years' Operation of Its Treatment Plant

By D. H. Hurst
City Engineer

NOW that three years have passed since Tifton, Ga., built and put into operation its sewage-treatment plant, city officials here look with a great deal of satisfaction on the way this plant has solved the vexing problem that had aggravated the community for so long. Although sewage here had received a slight treatment from a small septic tank, this treatment was negligible in relieving the nuisances and public health dangers that had been created. Stream pollution had become so bad that the city began to receive rather pointed complaints not only from the Georgia State Department of Health, but also from neighboring communities. Moreover, the outfall from this small plant encouraged the mosquito nuisance, causing the city and the county an annual expenditure of $2,000 for control and elimination.

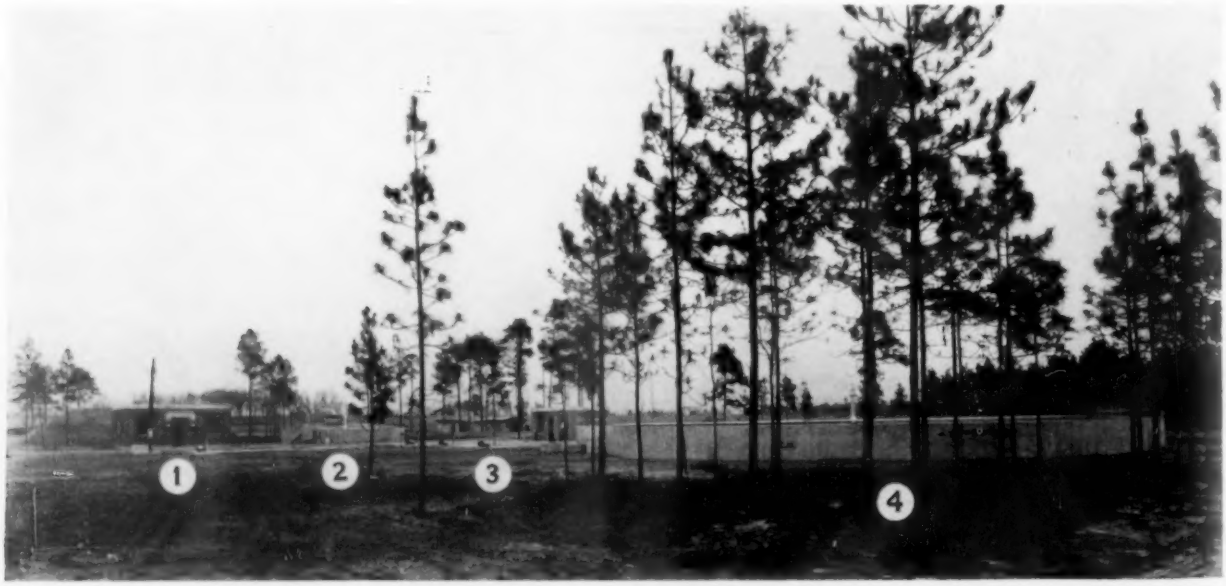
These difficulties are no longer a problem to the city. Stream pollution has been cleared. The State Department of Health has expressed entire satisfaction with existing conditions, and moreover the plant has improved conditions so that mosquito-control work no longer is necessary.

Handles Packing Plant Waste

Built in 1939, the plant handles not only domestic sewage, but also a large volume of packing plant waste. Some interesting problems arose because of the fact that packing plant operations were only seasonal. Present flows through the plant are .625 mgd, of which .325 mgd are sanitary sewage and .300 mgd are packing waste. Also, the influent from the packing company shows a 5-day BOD determination of 1,000 ppm, or almost four times that of the domestic sewage.

Design capacity of the plant is 1.25 mgd, or approximately double the present flow. Sewage receives complete treatment, with domestic and packing plant sewage receiving somewhat different treatment.

Foremost in the treatment methods employed here is the pretreatment given the packing house wastes. These wastes are delivered through a 12-inch sewer to a primary clarifier. From there the effluent is delivered to an aerator for the purpose of removing grease. It then goes by gravity to a second clarifier and through a venturi meter to the wet wells. From the



GENERAL VIEW OF THE TIFTON PLANT

1. *The Control Building. In the background is the sludge digestion tank insulated with an earth berm. The sludge drying beds are located beyond this, out of view.*
2. *The 55-trickling filter used for the preliminary treatment of packing house waste. The clarifier for the wastes and the grease-separation unit also are in the foreground.*
3. *The pump house and clarifiers for the combined treatment of domestic and packing house waste.*
4. *The final 115-ft. trickling filter.*

wells it is pumped to a 55-ft. trickling filter, and the resulting filter effluent is combined with the city sanitary waste.

97 Per Cent Grease Removal

Rather comprehensive tests have been made to determine the extent of the grease removal. From these tests the following data were established:

Raw	687 ppm
Flotation Unit	99 ppm
Primary Effluent	89 ppm
Filter Effluent	59 ppm
Plant Effluent	16 ppm

The reduction from raw to plant effluent is 97.5 per cent.

The sanitary sewage is delivered to the plant through a 15-in. sewer and is screened by a coarse bar screen. When it is combined with the flow from the packing houses, it proceeds to a primary clarifier, through a second venturi meter, and eventually is pumped to a 115-ft. trickling filter.

The efficiency of the treatment may be observed by the tests of the plant effluent. With a five-day BOD of 260 ppm in the domestic sewage and 1,000 ppm in the packing house waste, this plant is able to lower the requirements to only 22 ppm in the effluent. Suspended solids are reduced from 262 ppm in the influent from the domestic sewage, and 554 ppm in the packing house waste, to only 30 ppm as it leaves the plant. Dissolved solid reduction is not so thorough. With 642 ppm in the domestic influent and 3,000 ppm in the packing waste, this shows a count of 1,500 ppm in the final plant effluent.

The clarifiers, equipped with Jeffrey sludge collectors, require only nominal maintenance. All chains are adjusted often enough to keep the collectors from jumping and causing excessive wear on chains and sprockets. Whenever the tanks are unwatered the metal parts are cleaned with a wire brush and oiled with waste motor oil.

The American Well Work, distributors for the trickling filters also have given very good results. These filters are of a motor-driven type and require little adjustment. Collector rings are cleaned with gas and sandpaper every four to six months.

The digester is heated with a Crane boiler and is fired by sewage gas collected in a water-sealed gas dome in the top of the digester. The average output of sewage is 7,000 cu. ft. per day. The gas is measured by an American gas meter from which it passes through a P. F. T. flame trap to the boiler and the waste gas burner.

Thorough control of the treatment processes is facilitated by careful laboratory tests. Mr. Hurst is determining the extent of grease reduction by the hot-water bath and chloroform mehod.

Five sewage pumps are required for this plant. These are Yeomans vertical-type pumps. They are given careful attention to prevent the possibility of any mechanical breakdown; all bearings are washed with kerosene often enough to keep bearings free from sludge; all pumps are checked for alignment every week or ten days. Packing has been replaced once since the beginning of operation, and a slight amount of bearing trouble has been experienced. All bearings are greased at regular intervals.

The Carter plunger-type sludge pumps have required only nominal attention. Packing has been replaced once since the beginning of operations. All material is of the U. S. Rubber Co., matchless type packing. Sludge is pumped from two to three times every 24 hours, and line plugging has been experienced. This trouble has been overcome by pumping scum at the beginning and by washing out scum with enough sewage to get the scum far enough into the sludge line so that, when beginning to pump sludge, the scum would be pumped on to the digester and not left in the line to begin coagulation.

Some digester foaming has been experienced in winter months. At first this was thought to be due to an overload from the packing plant. While this might have been a contributing factor, the main trouble was that the outfall sewer from the city ran through a waste-acid lagoon about two feet deep adjacent to a local fertilizer plant. The pipe was damaged to such an extent that enough acid reached the plant to prevent a normal pH from being maintained in the digester. This pipe was replaced with new clay pipe and the joints filled with GK compound. This and other minor adjustments have helped to overcome foaming.

As flow from the city decreases in the summer months, because of dry weather and packing plant flow decrease, definite readjustments have to be established. All equipment that can be put out of operation and still maintain a satisfactory effluent is unwatered and greased to prevent corrosion. Sludge collectors which operated 24 hours a day during peak demands operate only 12 hours. All sewage pumps which are not in operation during low flows are operated by hand switch often enough to keep the pumps from becoming air bound, thus giving them some degree of intermittent operation, a practice which we believe is better than to let them stand idle so long at one time. All equipment is given a coat of paint every year. All valves are washed with old oil every six to eight months.

The plant was designed by the firm of Wiedman and Singleton, Consulting Engineers of Atlanta, Ga., and reviewed by W. C. Moore, Chief Chemist with Armor and Co. It was built as a PWA project with a 45 per cent grant.

How Houston Improves Its Municipal Airport

Improved Runways, Lighting System, and Protective Measures Keep This Port Abreast Aviation Progress

By PAUL B. KOONCE
Acting Manager, Municipal Airport
Houston, Texas

REALISTIC city officials know that air transportation as a part of the American way of life has passed from the phase of "will be" to "is." The practical problem for municipalities is now, and has been for some time, one of providing safe, efficient airports and landing fields.

Houston's municipal airport is attempting to keep up with the times. This is a difficult task in these days of flying freighters, giant transports and vital military operations, even when we are favored by the fine cooperation of the city's present mayor, C. A. Pickett. Mayor Pickett's support and active participation in aeronautical work has made it possible for him to realize the part aviation is playing in the development of a city.

Long-Range Master Plan

Airport facilities here are being developed in accordance with a long-range "Master Plan." This plan, designed by the city, has recently been accepted and approved by the Civil Aeronautics Administration. Its design takes into account in as far-seeing a manner as possible the freight and passenger service requirements expected during the post-war era. Mayor Pickett's fine interest in the airport and his close collaboration with officials of the U. S. Department of Commerce and Civil Aeronautics Administration has made possible this far-sighted development. Federal aid was made available for the construction of runways, drainage, and lighting systems in present improvements.

Houston, during the past 18 months, has spent slightly better than one million dollars for permanent improvements on its airport. It has increased the area of the field, paved three 4,500-foot runways as well as taxi strips, fenced the entire area, installed new modern lighting systems, and constructed new hangar facilities.

The lighting and runway systems were designed and constructed in strict accordance with U. S. Army and Civil Aeronautics Administration standards. The three runways are each 150 feet wide and fit into the "Master Plan" for a class 4 or highest type airport. The city furthermore purchased 368 acres of land at a cost of $147,000, increasing the total area of the field to 1,023 acres.

Heavy-duty galvanized Cyclone fencing with iron posts set in concrete surround the field. The lighting system, also installed in accordance with C. A. A. class 4-A specifications, consists of Crouse-Hinds range, flood, and boundry lights and Westinghouse contact lights, installed at a cost of $845,000. These contact lights line each side of the runway at 300-foot intervals.

The new hangar, 80 ft. x 80 ft. in size, forms the fourth side of three similar units occupied by aviation enterprises and provides essential space for repair of army aircraft. The hangar is of combination wood-and-steel construction having wood trusses for the roof covered by wooden sheeting and built-up tar and gravel roofing.

Zoning Ordinances, Fire Protection

Houston's Fire Department is cooperating in the protection of this municipal enterprise by assigning permanently a Reo 250-gallon fire truck complete with pumper and automatic foamite mixing equipment and sufficient personnel to give 24-hour protection.

The City Council has still further increased the safety of the port by passing zoning ordinances prohibiting the construction of buildings adjacent to the airport, thus facilitating the operation of planes in landing or taking off.

The airport here has had an additional asset which helps in its expansion and development program. This has been the temporary Standardization Center located here since February of 1941 by the Civil Aeronautics Administration under the supervision of Major Bennett Griffin. This center has been very active in the training of C. A. A. Inspectors and pilots for the Ferry Command. Mayor Pickett expects this to become a permanent part of the airport.

The writer recalls the statement made by the late Justice Cardozo of the United States Supreme Court fourteen years ago in his opinion in the case of *Hesse vs. Rath*. At that time he stated, "Aviation is an established method of transportation. The city that is without the foresight to build ports for the new traffic may soon be left behind in the race for competition. Chalcedon was called the City of the Blind because its founders rejected the nobler site of Byzantium. The need for vision of the future, in the government of cities, has not lessened with the years. The dweller within the gates, even more than the stranger from afar, will pay the price of blindness."

This need for vision is as important today as it was fourteen years ago.

Planning Deeds More Vital Than Planning Words

MALCOLM H. DILL'S suggestion of new planning terms, as presented in the October issue of THE AMERICAN CITY (page 99), has evoked the following comment by Charles B. Bennett, Director of Planning of the City of Los Angeles:

"It was with mixed feelings that I read the statement in your October issue suggesting new planning terms. As I read I muttered to myself "here we go again, boys."

"Frankly, who, outside of a few Phi Betas in the planning profession, really cares whether it is Geo, Physio, Socio, or Bunco planning? Ketchup is Catsup no matter how you spell it, and planning is planning regardless of whether it wears a 'brass hat' or a 'beanie.' What we need is more ideomatic terminology in our sales campaigns. Mr. John Q. Citizen has a tough enough time understanding us now without increasing his suspicion by prefixing planning with a new tongue twister.

"At least until the war is over, or the public authorities for whom I work catch up with me, I'll stick to City, Regional, State, and National planning. After all, the British have done very well in *Town* planning for decades, and the British can't always be wrong."

Bushnell's Battle for Municipal Light and Power

How This Illinois Community Established Its Municipal Electric System

"DON'T think it wasn't worth while," says George L. Porter. "Of course it was an uphill fight all the way and meant a lot of unselfish work on everybody's part. But the benefits we have been able to realize have outweighed the trouble by far. We now have an improved electric service, lower rates, and we have established a going municipal business that symbolizes the spirit and independence of the town. If this fight faced us again we wouldn't hesitate a minute to pitch in and whip it the way we did before."

Civic-minded Mr. Porter, manager of a local, cooperative grain-elevator company, served as mayor during this community's fight for its municipal plant. As he can testify, the establishment of a municipal electric plant generally is accompanied by a healthy, old-fashioned scrap with the private utility, with no holds barred. However, few cities have had a more rocky road than the one traveled by this thrifty Middle-Western farming community.

For many years, people here had "worried along" with indifferent electric service and high rates. There were other features of the municipal administration that did not entirely suit the practical-minded town either. And in the spring of 1937, certain progressive citizens persuaded Mr. Porter to run for mayor. He consequently decided that if he were to seek this office he would offer a firm and aggressive platform that would bring real benefits to his town.

At the outset, he promised to lower the electric rates some way or another, either by negotiation with the power company or through the construction of a city-owned power plant. Along with this, he resolved to adopt a more businesslike municipal administration which would cooperate with all city, county, or state officials and would administer municipal duties more efficiently.

Mr. Porter's platform appealed to the people in Bushnell, and he was elected by a firm majority. He thereupon immediately began his battle for electric rate reduction and improved electric service. Negotiations resulted, after considerable argument and conferences with the power company, in a new, lower rate but with a franchise covering a period of 50 years. This Mr. Porter and his aggressive council immediately rejected.

Thereupon, since further negotiations were deadlocked and profitless, he and his council arranged to have a study made of the possibility for a municipal plant, retaining a firm of consulting engineers to make a preliminary report on the possibilities. A number of municipally owned plants both in Illinois and in surrounding states were visited by the mayor and his council.

Upon receiving a favorable recommendation from the engineers, the mayor and his council proceeded to hold a mass meeting on November 22, 1937, to explain the results of the investigation as well as other developments in the power situation. A representative of the power company was in attendance also and presented his company's side of the case.

Following this, the town made another active move toward the construction of the municipal plant, retaining along with their

engineers, an attorney, taking an option on the land, and making arrangements for a PWA grant. Following this, they began an active campaign for a municipal election to authorize the construction of the plant.

Elections

The first election lost by 62 votes. A second election held six weeks later was favorable to the municipal ownership plan by 41 votes. However, that was far from the end of the troubles that Mayor Porter and his council had in store for themselves. On the evening of the election, the power company, by a legal order, impounded the ballots placing them in the custody of the court. Two months later, the court cleared the way by ruling that there had been no evidence of fraud on the part of the city. Persistently, the power company instituted two other court actions, equally unsuccessful, in an effort to block the construction. The last of these was in February 1940.

In the meantime, since everyone, with the exception of the determined private electric utility company, was convinced that the plant should be constructed, the town had been proceeding with this construction. It already had received a grant of $96,750 from Public Works Administration and had begun the work in the face of the impending legal action. On July 11, 1940, the plant began generating electricity for the citizens of Bushnell.

With all its efforts, the town still was not able to force the utility to withdraw. Under court interpretation of Illinois law at the time, the utility, once it had become established, could not be forced out of town even though its franchise had elapsed. This meant that Bushnell had earned the right only to operate its municipal plant in competition with the private utility.

Recent decisions by the Illinois Supreme Court, however, have reversed this opinion, enabling the city to hurdle the last obstacle standing in the way of complete electric service to its people.

"As a matter of fact," states Mr. Porter, "from a practical point of view the competition didn't hurt us. We proved the efficiency of our plant the hard way. When the people had their choice, they preferred the service of the municipal plant.

"It did make it a little messy, though," he concluded. "We had two distribution systems, two sets of street lights, and a double row of poles down the street. Folks used to say that you couldn't see the town for the light poles."

Plant Construction

In regard to the actual construction, the original plant consisted of three 300-hp Fairbanks Morse, four-cylinder diesels, each connected directly to a 255-kva, 204-kw generator. Two-stage Gardner Denver compressors furnish starting air for the engines. Water for the engines' cooling system is treated by a Graver zeolite water softener. The cooling water system is designed in two separate circuits, the jacket water being treated to prevent corrosion, and raw water being cooled by the Marley atmospheric spray cooling tower and in turn cooling the jacket water by two Ross heat exchangers.

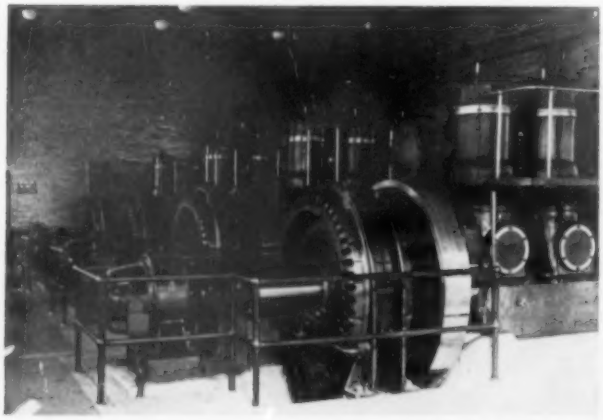
Lubricating oil is purified by a 5-gallon Renuoil Purifier with automatic heat control. Air intake is supplied by American air filters located between Maxim exhaust silencers.

A modern Westinghouse dead-front panel switchboard and switch-gear furnish the control for the plant. The entire plant is protected with the latest type alarm systems. There are three Alnor pyrometers mounted on the signal panel, one for each engine.

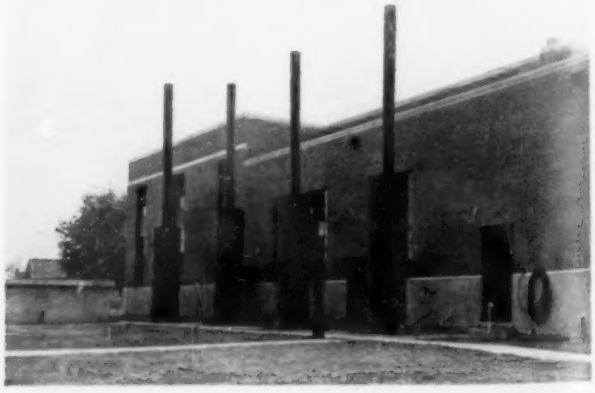
Demand Increases

The demand for power grew far more rapidly than had been anticipated, until the need for additional generating equipment became apparent. During 1941, the town constructed an addition to the plant consisting chiefly of one 300-kw Fairbanks-Morse diesel generating unit. This also called for an additional Westinghouse switchboard and an extension to the building. The total cost of this installation was approximately $43,000.

Warren and Van Praag, Inc., Decatur, Ill., were the consulting engineers on this work. Tiernan Engineering Co., Bushnell, supervised construction of the work and performed the detailed design of the 1941 addition.



Four 300-hp diesel engine-generators furnish power for this municipal plant.



Air intake is supplied by American air filters located between Maxim exhaust silencers.

If the Cities Fail in Their Duties, Democracy Fails

Interdependence of Local, National, and International Governments

By Clyde Eagleton
Professor of International Law, New York University; Chairman, Studies Committee, Commission to Study the Organization of Peace

IT is a tragic commentary upon our intelligence that it requires the shock of war to make human beings plan with vigor for their own improvement. It does seem that they would be willing to work as hard for the peace which they crave as for the war which they hate. At any rate, there will be both ample need and ample opportunity for improvement after this war—a need and opportunity which extends to municipal government. The need is not the same in the United States as in England, where whole towns have now to be rebuilt; but in this country, as elsewhere, the social and economic disorder which war generates will have to be met to a greater degree than ever before by government agencies. For this, plans will have to be made long in advance; we cannot afford to wait until the war is over, when our needs would have to be met hastily and unsatisfactorily.

Municipal planning for post-war needs is part of the larger general problem. It will depend upon state and national activities and plans, and these in turn upon social and economic changes and principles; but it is not so generally recognized that these principles and activities will depend largely upon what is done in the way of international reorganization. It is to this aspect of the situation that these few remarks are directed. The connections between the largest and smallest of governmental units—between world government and municipal government—are remote and easily overlooked; but they are nevertheless important and should be kept in mind.

City government is part of a national system of government and is subject to the same forces that affect the latter. The state, so political scientists have said from the days of Aristotle, exits to protect and advance the welfare of the individuals who compose it. We have long been accustomed to thinking of the state as the ultimate form of human organization, *ne plus ultra*. Today, however, the state is no longer able, alone, to serve this function with satisfaction to its individual members. It cannot do so because of the interdependence which has accumulated during the past century and a half, which has made the individual, in his dependence upon others, call on government for more and more help, and which has made nations, like individuals, depend upon each other to such an extent that they now call for international government. And just as interdependence has wrecked the economic security of the individual, so the threat of war, in its pervasive and destructive modern character, has wrecked his physical security. As long as the threat of modern war exists, no government can be free to devote its energies to the welfare of its citizens; it must remain industrially organized, at the expense of private enterprise, of liberty and democracy, to be ready for the next war. Even the mighty United States has been unable to protect its citizens against economic depression and war, both of which came upon us from the outside.

This situation, so sketchily described, has consequences of large scale to national government, and these reach down to the lowest units of local government. Town planning is not just a matter of architecture and engineering; it must be based upon the needs of human beings. All over the world these human beings complain of their insecurity, and the pressure of their discontent will affect planning from international government down to the smallest village. It is a striking characteristic of the peace plans being offered today that they are addressed to the needs of individuals rather than of nations. In this respect they depart from the plans of 1919, when one thought only in terms of sovereign states.

Democracy Must Be Worth Fighting For

The planning of cities must also be adjusted to such thinking. We have discovered that conditions of health and housing and transportation and such matters are not really as good as they should be in what we like to think of as the leading country of the world. We have found that some of our standards are so low as to offer the enemy a ground for political warfare against democracy; and we have learned that we must make democracy worth fighting for and worth emulation by other peoples. We cannot just stand on our past record. A large part of the responsibility for improving the conditions of life for American citizens rests upon municipal governments, and they must be farsighted and courageous if they are to keep pace, for example, with the great social advance now being planned by English municipalities. If the cities fail in their duties, democracy fails; and democracy has been put definitely on trial by this war and by the social revolution of which it is only a part.

There is a definite relation, too, between the city planning of the future and the need of an international government strong enough

to prevent war. If we are to have war in the future—and we undoubtedly will, unless we build an international system strong enough to prevent it—we shall have to stay prepared for war, which means industrial mobilization, and also be prepared for invasion, which is no longer out of the realm of probability. This means that men, materials, and efforts must be diverted to war purposes rather than toward what we might ordinarily wish to do for the advancement of human welfare. It might mean that a factory must be located in a safer place, or that highways and railways and aviation ports must be located according to strategic military needs. If there were no war they could be located where it seemed best for industrial needs or the needs of those who work in them. Those who are interested, then, in the ordinary problems of municipal activity must take an interest in the prevention of war in the future if they are to be able to do the things which they wish to do.

Adapting Wartime Controls to Purposes of Peace

A great many lessons can be learned from our experiences during the war. Some of the controls established for war purposes could be carried on for purposes of peace. Methods and organizations for air raid and fire prevention and such matters may be of use for the future. Lessons learned and opportunities provided for the shift of populations to new war industry communities — such as provision for the care of children of working parents—should not be forgotten. It would be foolish not to take advantage of such opportunities.

Indeed, it would be foolish if we were not as willing to make changes for purposes of peace as we are to make them for purposes of war. The period of war offers both the psychological atmosphere and the actual opportunities for progress. The exigencies of war destroy existing institutions and produce new problems that require solutions. People are jolted out of their preconceived beliefs; and the costs of new enterprises seem small in comparison with the costs that are being paid for the war itself.

Everyone wants to make the sacrifices of war worth while by improvement. As F. J. Osborn says in *Overture to Planning*,* "The more the nation focuses its physical energies on the war, the more it wants to hear about schemes for better cities after the war." We should be thinking far ahead to meet the social needs which are now being recognized, and in such thinking we must keep in mind the principles of social development which are now appearing. And these, it must be emphasized, cannot be realized without an effective international government to help keep down economic disorder and the danger of war.

* Rebuilding Britain Series No. 1 (Faber and Faber, Ltd., London).

The Way to Industrial Diversity

"THE future destiny of New England lies largely in the heads, hearts, and hands of her citizens. Only through their thinking, loyalty, and action can our regional problems be successfully solved." Thus Dwight L. Palmer ends his foreword to "Another Tale of Two Cities," a case study of two towns in Massachusetts, published recently by the National Resources Planning Board.

Five Desirable Goals

The problems facing many cities and towns are the same as those of these two Massachusetts towns—Fitchburg and Brockton. Among these, Mr. Palmer points out, is the one of achieving industrial diversification. In this community activity every citizen has his role to play, for no project of this kind, no matter how brilliantly planned, no matter how energetically directed, can be assured of success without general good will and citizen backing. The enthusiasm of the citizens alone can provide evidence of that spirit which a thoughtful industrialist who considers locating in a community rightly believes is the surest sign of a town's social virility and economic stability.

If the community is chosen as the active agent in influencing industrial location, a planned procedure is requisite. To achieve this industrial diversification, so necessary to the life of any city, five desirable goals are set forth in this study:

1. Balance of the community's skilled, semi-skilled, and unskilled workers after the new industries are in operation
2. Balance among age groups
3. Balance as to the sex ratio
4. Balance as to the seasonal peaks of the products in question and the dovetailing of such peaks if possible
5. Balance in terms of cyclical effects dependent upon the types of product in question, with "heavy" and "light" industries in relative balance

In striving to attain these goals, it is well to bear in mind the following policies:

1. It is unwise to advertise free rents, tax reductions, and cheap labor as means of inducing firms to locate in the community. Companies that are attracted by such inducements frequently prove liabilities rather than assets.

2. Certain individuals who are strongly concerned with community developments must serve as "spark plugs" and provide the initiative for the program.

3. A careful analysis should be made of the basic factors of the town's industrial makeup; also an estimate of the number of kinds of industries which are desirable. The community should make a plan of industrial development, determine what it can offer to new industries, and carefully evaluate each new industry that considers locating in the community from the point of view of what that particular enterprise can offer.

4. Making overtures to new firms is a delicate matter. The goal should be to present the facts fully and dispassionately to men who will make decisions on industrial location.

5. The whole community must be aware of its need, for new industries and the citizens must cooperate in the program.

Mobilizing for the Post-War City

THE city of the future cannot be built without that kind of unfish devotion wihch enables individuals to pool or abandon some of their property rights and priviliges for the common welfare.

No such wartime objectives in planning will bear results without mobilizing men after peace for a *new war*, this time a non-military but nevertheless well-planned war, to destroy *slums, misery, darkness*—a war for peaceful reconstruction, when mobilization *this time* will be the joyful uniting of all energies of mankind to make a better world for the future.

—From a recent broadcast by MAURICE E. H. ROTIVAL, Associate Professor of City Planning at Yale University.

Insurance Program of the City of Saginaw, Mich.

By Carl H. Peterson
City Manager

PRIOR to 1936 the city of Saginaw, Mich., lacked a well-defined insurance program, and city properties either were not insured at all or were inadequately insured. In April 1935, the City Hall was so badly damaged by fire that it was not considered advisable to attempt repairs. There was a considerable financial loss due to under insurance. The city offices thereafter took up temporary quarters in the modern water-works building.

In October of 1935, the city electors voted a new charter, providing for a council-manager government, and on January 6, 1936, the new council took office. One of the pressing problems confronting the new council was the financing and erection of a new city hall, which was completed early the following year at a cost of $261,000 exclusive of fixtures. Another problem which was given early consideration was the necessity of establishing and carrying out a definite insurance program.

The Saginaw Association of Insurance Agents, through a committee appointed for that purpose, offered their services in an advisory capacity. All the city properties were surveyed by insurance-company engineers, rates were revised where necessary, changes were suggested which would reduce hazards and reduce rates, and a comprehensive insurance program was submitted. The City Insurance Committee, giving consideration to the relative hazards to which the municipality is exposed as well as to the money available for the purchase of insurance, instituted a program, which has been periodically checked.

Reading Down: Water Plant, Fire Headquarters, and Municipal Auditorium of Saginaw, Mich.

Among the benefits of dealing with one association are better supervision of the account, competitive bidding among the members for the city's business, and an equitable distribution of premium to the local agents. Every city is familiar with the pressure and difficulty presented to officials when they are required to apportion insurance to individual agents.

The present City Insurance and Surety Bond Committee is made up of the city manager, city clerk, city attorney, director of finance, and the purchasing officer who acts as secretary. The dirctor of finance passes on the financial condition of the insurance carriers participating in the business. While the general insurance policy is determined by the city council,

proper authority has been delegated to the Insurance Committee which purchases insurance through the Saginaw Association of Insurance Agents, as directed by the council.

The general policy in setting up the schedule of fire insurance has been to use the coinsurance clause on the larger buildings, with a few exceptions, such as, the airport hangar where normal coinsurance credits do not apply because the building is located outside the city. Fireproof buildings usually are insured with the 50 per cent coinsurance clause. Admittedly this may provide more insurance in some instances than any probable loss, but because of the large credits which apply, the amount of insurance which could be carried for the same premium without coinsurance would not be adequate. Buildings not fire resistive but of good ordinary construction, where the occupancy hazard is not heavy, are insured with the 80 per cent clause, because it is felt that even in the case of a severe fire there would be some salvage. On the other hand, in instances where it is considered that a loss might conceivably approach total, the 90 per cent clause has been used. It has not been the practice to use the coinsurance clause in the case of small items such as tool sheds, storage sheds, or where it would be difficult to arrive at sound value. Very small sheds and outbuildings, of which the individual value would not exceed a few hundred dollars, have not been insured.

Other Insurance

A careful inventory of the city's personal property was made and a general form drawn up providing specific amounts of insurance on contents at various locations. Voting machines and band instruments are covered under all-risk policies. The last insurance authorized by the committee was a total of $1,215,000 against war damage to the city hall and water works.

A survey of casualty hazards was made, with the result that the City Insurance Committee approved coverage on the machinery in the water plant and all steam boilers wherever located; liability and property damage on all automotive equipment used by the water department; public liability on each municipal swimming pool; safe burglary; messenger and interior robbery covering several locations; and general liability at the municipal auditorium and the municipal airport.

All automotive equipment owned by the city is insured against fire and lightning, and the city's fire department equipment is insured against loss by collision, fire, and lightning while in use on runs outside the city limits. The same equipment is covered for bodily injury and property damage while on runs outside city limits, and the firemen themselves are protected under a workmen's compensation policy which covers them on such runs.

The possibility of a large loss has been taken into account in practically all cases and limits of liability carried accordingly. For example, limits of $100,000 for each person and $300,000 for each accident with $10,000 property damage are carried on the fire department equipment for runs outside the city. Typical also are the limits on the municipal auditorium of $50,000 and $100,000.

A careful examination of the bonds carried showed too much protection in some cases and too little or none in others. This has been corrected, and all employees whose duties include handling of any funds are bonded.

PRINCIPAL BUILDINGS IN FIRE INSURANCE PROGRAM OF SAGINAW, MICH.

Building	Insurance	Construction	Coinsurance
Central Fire Station	75,000	Fire resistive	50%
Fire Stations #2	6,200	Frame, brick veneered	80%
" " #4	5,000	Brick ordinary and brick veneered	80%
" " #5	7,500	Brick ordinary	80%
" " #6	6,300	Brick ordinary and brick veneered	80%
" " #7	7,500	Brick ordinary	80%
" " #8	11,000	" "	80%
" " #9	8,000	" "	80%
" " #10	10,000	Fire resistive except unprotected steel	No
Auditorium	205,000	Brick ordinary	90%
City Hall	125,000	Fire resistive	50%
City Garage	20,000	Brick ordinary	No
Zoo Animal House	11,000	" "	80%
Airport Hangar	10,000	Brick and glass ordinary	No
Water Pumping and Filtration Plant	550,000	Fire resistive	50%
Water Dept. Garage	12,000	Fire resistive and ordinary	80%

Where Tax Money Is Found

TAXES IN ORDER OF FISCAL IMPORTANCE, 1941

(Exclusive of Payroll Taxes)

Tax	Federal	State	Local (estimated)	Total	Percentage of total collections
Property	$	$ 244,300,385	$4,445,000,000	$ 4,689,300,385	30.87
Income	3,471,122,000	435,543,467	20,000,000	3,926,665,467	25.85
Gasoline	381,242,000	922,321,221	4,500,000	1,308,063,221	8.61
Alcoholic beverage	819,869,000	262,562,868	3,500,000	1,085,931,868	7.15
Tobacco	697,712,000	107,814,788	.....	805,526,788	5.30
General sales and use	32,804,000	569,106,001	70,000,000	671,910,001	4.42
Motor vehicle	158,287,000	460,689,177	2,000,000	618,976,177	4.07
Inheritance, estate and gift	407,056,000	119,850,007	.....	526,888,007	3.47
Customs	391,321,000	.....	.....	391,321,000	2.58
Other	462,056,000	450,815,170	255,000,000	1,167,861,170	7.68
TOTAL	$6,819,451,000	$3,573,003,082	$4,800,000,000	$15,192,454,082	100.00

This table, covering all taxes collected in the United States last year, is reproduced from the Tax Institute's new report listed on page 97 of this issue.

Cities Planning for Post-War Municipal Improvements—II

***Last month* THE AMERICAN CITY *published brief statements from head officials of 37 cities of over 50,000 population regarding their plans for post-war public works. Since the November issue went to press, 39 additional cities in this population group have furnished the information published on this and following pages. Here is the wording of the five questions and a summary of the replies included in both installments.**

1. *"Has your city begun to plan for post-war public works or other municipal improvements to be undertaken when materials and manpower are available?"*

It is significant that as against 93 affirmative replies, only 3 cities gave a negative answer to the first question.

2. *"If so, what are the principal types of projects contemplated in these plans?"*

The replies indicate that the "shelf" of post-war public works includes practically all forms of municipal improvements.

3. *"By what department of the city government are such plans being made?"*

City Plan Commission alone	2
City Plan Commission and other departments	4
Engineering Department alone	33
Engineering Department and other departments	12
City Plan Commission and Engineering Department	2
Public Works Department alone	7
All departments affected	14
Water Department	1
Assistant to Mayor	1
Special Committee	1
City and County Commissioners	1
Reply left blank	2

4. *"What responsibilities and powers does your city Planning Commission have as to post-war planning?*

Advisory only	27
Mapping program and for coordination	12
Obtain cooperation of departments	10
Local only	1
Power to approve or disapprove	4
Direct responsibility	11
Citizens advisory committee	1
Master plan in operation	2
No responsibilities or powers	8
No city planning commission	15
Reply left blank	4

5. *"Is your city setting aside any reserves, in war bonds or otherwise, for post-war public works?"*

Yes	10
No	68
Question being studied	6
No legal provision	8
Reply left blank	5

• • • —

Berkeley, Calif.

CHESTER C. FISK, City Manager:

2. and 3. The projects are of all types and are being planned by all departments. These plans and estimates of costs were drawn in accordance with the Public Works Reserve of the National Resources Planning Board. Actual projects have been set up with estimates so that when finances, material, and manpower are available, work could be started within a short time
4. The City Planning Commission has overall responsibility for a city plan. It is engaged in a study of this kind at the present time
5. The City of Berkeley is not in a position to set aside any reserve for post-war improvements. The municipality operates on the tax limit contained in its city charter, and with the additional expenditures occasioned by the war situation does not have any funds which can be put into a post-war reserve

Birmingham, Ala.

W. COOPER GREEN, President, City Commission:

2. A program of grade separation projects and major thoroughfares, as well as local street work, is being planned; also new city hall, parks, Negro swimming pool, school buildings, etc.
3. Engineering and Park Departments, and Board of Education
4. No planning commission. J. W. Morgan, City Commissioner, has been appointed Post-War Planning Commissioner, and J. D. Webb, City Engineer, is his assistant
5. No, but plan to

Buffalo, N. Y.

NEWELL L. NUSSBAUMER, Commissioner of Public Works:

2. (a) Accumulated street paving projects—bridge and viaduct repairs—and building repairs; (b) small construction projects such as new fire house, incinerator addition, water-works additions, remodel sewage plant at hospital; (c) major projects such as Buffalo River crossing, either tunnel or bridge, new incinerator, slum clearance
3. Department of Public Works
4. Planning Commission has just been formed and has as yet not received a budget appropriation. A post-war planning committee of the Common Council has had some meetings
5. No, but the city is retiring outstanding bond issues so their credit will be improved in the future

Camden, N. J.

GEORGE E. BRUNNER, Mayor and Director of Revenue and Finance:

2. Completion of: street program, sewage-disposal system, projects on public buildings, cemeteries, extensive park systems, etc.
3. City Engineer Department
4. No planning commission
5. Yes

Charleston, W. Va.

D. BOONE DAWSON, Mayor:

2. Municipal hospital, sewage-disposal plant, recreational fields and grounds
3. City engineers; special engineers will plan sewage-disposal plant
4. City Planning Commission approves location of all projects named above
5. No funds are available

Columbus, Ohio

P. W. MAETZEL, Chief Engineer:

2. Grade crossing eliminations, street improvements and widenings, swimming pools, recreation facilities, bridges, additional engine houses
3. Principally by the Division of Engineering and Construction
4. None
5. Financially unable to set aside reserves

Corpus Christi, Texas

A. C. WALKER, City Planning Engineer:

2. Rehabilitation of substandard areas, arterial trafficways, street paving, and recreational plan
3. Engineering Department, in cooperation with various departments
4. Advisory
5. Bonds for street paving, city-county hospital, drainage structures were voted before the war. Most of these funds will be available

Decatur, Ill.

CHARLES E. LEE, Mayor:

2. Extension of storm and sanitary sewers, water-works facilities, including lake conservation (silting is big problem), elimination of grade crossings, street widening, and improvement of street lighting
3. Engineering Department supervising, all departments cooperating
4. Works closely with City, Township, School Board, Sanitary District
5. Gas tax accumulating. Generally Illinois law does not permit reserves

Denver, Colo.

FRANK R. DUTTON, Secretary to the Mayor:

2. Mayor Stapleton and his administration have several things in mind for post-war activities, which will be worked out when the opportunity presents itself. It is not thought advisable to make public these plans until such time arrives as seems possible to carry them out

Erie, Pa.

CHARLIE R. BARBER, Mayor:

2. All types of municipal structures, grade separations, drainage, flood control, buildings, pavement, park and playgrounds, etc.
3. Bureau of Engineering; C. K. Pulling, Coordinator of Public Works
4. Preparation of program for approval by City Council
5. To be considered in current budget sessions

Evanston, Ill.

JOSEPH L. ROSE, Commissioner of Public Works:

2. Sewers, highways, water department, and grade separations (highway—railway)
3. Department of Public Works
4. Advisory power only
5. No, but is reducing bonded debt

Fort Wayne, Ind.

HARRY W. BAALS, Mayor:

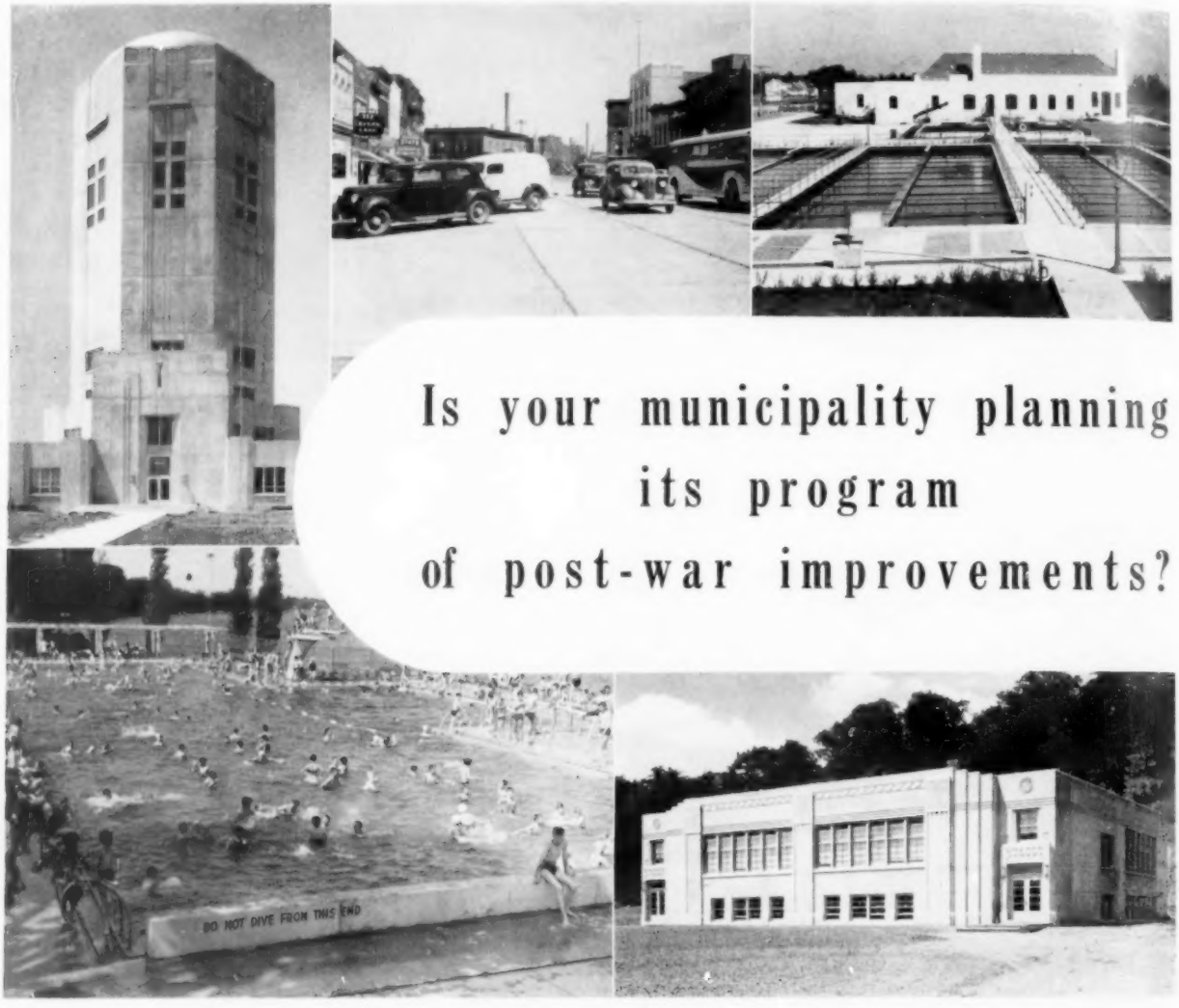
2. Sewers; track elevation; street, alley and sidewalk pavements; relay brick alleys; bridge repair; and street grading
3. City Engineering Department
4. None
5. No

Irvington, N. J.

HERBERT KRUTTSCHNITT, Mayor:

2. Covering up of Elizabeth River; East to West through Boulevard; Library; Police and Fire Headquarters
3. Town Planning Board and Town Engineering Department
4. Powers conferred by statute
5. None

A Challenging Page from a Recent Issue of "The Municipality," Monthly Magazine of the League of Wisconsin Municipalities



Is your municipality planning its program of post-war improvements?

Except for certain industrial construction, the war ended a period of extensive building activity in Wisconsin cities and villages. When peace comes, construction will be resumed, for Wisconsin has not been able to complete the municipal projects demanded by citizens.

Every one of our cities and villages faces the post-war days with definite and immediate needs—streets and alleys, sewers and water works, schools and auditoriums, parks and playgrounds—built to an integrated plan and scheduled for construction according to necessity and ability to finance.

This is a task that cannot be undertaken on a moment's notice or executed in hit-or-miss fashion. The time for planning is NOW! See that organized planning is started now in your community so that post-war action may be sound, well considered, constructive, properly financed, and above all ready for immediate initiation. Careful planning will reduce the cost to your taxpayers.

* * *

A well-organized post-war program will assure continued employment for defense workers and returning soldiers on necessary projects.

FIRST, WIN THE WAR, BUT LET'S BE PREPARED TO WIN THE PEACE.

LEAGUE OF WISCONSIN MUNICIPALITIES

Kalamazoo, Mich.

E. S. CLARKE, City Manager:

2. Building, public works construction, parks, playgrounds, cemeteries, financing, public utilities, water and light
3. All departments
4. None
5. No

Lakewood, Ohio

E. A. FISHER, City Engineer:

2. Interceptor sewers, street and main thoroughfare extension with utilities, street widening, city hall, courts building, addition to incinerator plant
3. Engineering Division of Public Works Department
4. Advisory only
5. No authority in state law for creation of reserve fund

Lansing, Mich.

G. P. MANZ, City Engineer:

2. Additional units at sewage-disposal plant, new bridges and connection roads, addition to City Hall, new parks and playgrounds
3. Engineering Department, Public Works Department, Park and Cemetery Department
4. Plans as laid out by the Commission are being followed
5. No, not as yet

Long Beach, Calif.

GEORGE E. BAKER, City Engineer-Director of Public Service:

2. Street improvements, bridges, sewers, storm drains, buildings, street lights, yacht harbor, gas and water distribution and storage, piers, transit sheds, harbor development, fire alarm communications, fire stations, playgrounds, and park improvements
3. City Engineer, Gas, Water and Harbor Departments
4. Advisory only
5. No

Macon, Ga.

CHARLES L. BOWDEN, Mayor:

2. Projects that will require much labor and that have been suspended because critical material demands. Sewer systems, street pavement, incinerators, public buildings, recreation grounds, additions to Health Department, nurses home, etc.
3. Engineering Department, Street Department, Sanitation Department, Recreation Department, Health Department, Hospital Commission
4. No Planning Commission
5. Yes, and working toward retiring the bonded debt so that a portion of income may be used to pay as the proram progresses

Malden, Mass.

VERNON C. NEWMAN, Mayor:

2. New police station, new City Hall
3. Mayor and city government
4. None
5. No

Miami, Fla.

A. B. CURRY, City Manager:

2. Sanitary sewers, enlarge stadium, City Hall, high school auditorium, baseball field, comfort stations, community buildings, bulkheads, playgrounds, swimming pools, Pan American Center, resurface streets, storm sewers, repaving, retreading streets, new bridges
3. Department of Public Service
4. Pass on all projects
5. No

Oakland, Calif.

JOHN G. MARR, City Planning Engineer:

2. Building, electrical, engineering, fire, health, library, park, police, recreation, street
3. The particular departments involved prior to detailed plans
4. The City Planning Commission acted as the agency in the initiating and carrying forward of the preparation of Public Works Reserve in this city. The Commission is now preparing a report on this subject
5. Not at the present time

Oklahoma City, Okla.

J. W. HINTON, Secretary, City Planning Commission:

2. Housing rehabilitation, widening highways, converting war plants into peacetime production, street and sewer improvements
3. The City Planning Commission along with our Mayor in conjunction with Chamber and civic bodies
4. Advisory
5. Not as yet, except for completion of water supply and highway projects now under way

Phoenix, Ariz.

JOHN C. SWEENEY, Director of Public Relations:

2. An assortment of projects designed to act as a cushion for the shock of conversion from war economy to peace

Good Transit

Are local transportation problems getting their proper share of attention in the post-war plans of municipalities? Perhaps the reason why few cities are mentioning transit plans in this symposium on "Planning for Post-War Municipal Improvements" is that street railway and bus lines are not yet, in most cities, publicly operated. Forward-looking municipal governments have come to realize, however, that private ownership does not relieve public officials of responsibility for requiring of their local transportation carriers maximum wartime efficiency. And surely as a factor in post-war planning an adequate transit policy—whether for public or private operation—belongs with the planning of the other vital utilities and improvements listed on these pages.

3. The City Engineering Department, in conjunction with the Director of Public Relations
4. All responsibility vested in the Commission and the Mayor
5. No Contingent Reserve Fund established as yet, and the entire plan is nebulous as regards date of inception

Pittsburgh, Pa.

JOHN P. ROBIN, Mayor's secretary:

2. Major highway improvements for traffic relief at approaches to city and in downtown area, sewage-disposal systems, new water supply system, extended recreational and park facilities, housing
3. Planning commission and department of public works
4. The coordination of the post-war planning program has been placed in the hands of the Commission. It will be voted funds to perform actual planning operations. It must also develop plans in accord with county and state programs
5. City is conserving its borrowing capacity by issuing no new bonds and by retiring more than $4,000,000 debt each year. The increase in the city's borrowing capacity achieved is in effect a reserve for future construction

Portland, Ore.

BEN S. MORROW, City Engineer:

2. Sewage-disposal system, water distribution extension
3. Public Works and Public Utilities
4. Recommend and make suggestions to the council and all other authorities. May study and propose such measures as may be advisable for the promotion of the public interest, health, morals, safety, comfort, convenience, and welfare of the city and of the area 6 miles adjacent thereto
5. City is collecting a slight surplus in the sewer-user service fund to be applied on early construction of the sewage-disposal system

Richmond, Va.

JAMES BOLTON, Secretary, City Planning Commission:

2. and 3. Public Works Department projects: major trunk highways, street improvements generally, traffic relief streets, airport, bridges, water terminals, trunk and lateral sewers (storm, combined and sanitary), recreational areas and facilities, swimming pools, and cemeteries. Department of Public Utilities projects: extension of water and gas services and facilities and street lighting. Projects of Department of Public Safety, Public Welfare, and School Board
4. Attend planning conferences or hearings upon pending planning legislation. Recommend to the Council and appropriate public officials programs for public improvements and for the financing thereof
5. Richmond's capital improvement projects are financed initially by temporary loans authorized by the City Council under the powers vested by the Charter of the City, to be later and within the 12-month period absorbed in an issue of general obligation bonds for purposes itemized

St. Petersburg, Fla.

GLEN V. LELAND, City Manager:

2. Airport extension, police station, addition to library, extension to sewer systems, sewage-disposal plants, bridges, incinerator, addition to hospital
3. Public Works
4. Recommendation only
5. Attempting to set aside funds from current revenue

San Antonio, Texas

FRANK W. BRADY, Secretary to the Mayor:

2. Health Building additions, construct Health Clinic, addition of second story to Witte Memorial Museum, new fire alarm system, to new fire stations, new traffic and police signal systems, 400-ton garbage incinerator, new recreation facilities, equipment, swimming pools and bath-houses, new grandstands at polo field and baseball park, general improvement of numerous streets and alleys
3. All departments: i.e., Health, Street, Parks, Fire and Police, and Department of Public Affairs (Mayor's)
4. Prepare all plans and submit proposals as well as estimates of various costs to the City Council
5. Not so far

San Diego, Calif.

GLENN RICK, City Planning Engineer:

2. Public buildings, highways, water and sewer facilities, parks, recreation, harbor, airports
3. Public Works, Water, Harbor, Planning
4. City charter adopted provisions of California Planning Act. Charter also requires the City Manager to make a long-term program of physical improvements
5. No. A charter provision prohibits carrying over from one year to the next, but work is being done on an amendment to change this

San Francisco, Calif.

DAVID LEWIS, Administrative Assistant to the Mayor:
2. Streets, highways, tunnels, dams, power houses, power transmission lines, schools, libraries, and other public buildings
3. Departments involved
4. None
5. No

San Jose, Calif.

EDWARD A. WILLIAMS, Landscape Architect and Secretary, Planning Commission:
2. Parks, airport, sewage-disposal plant, public works—storm sewers, sanitation, major street connections, major street widenings
3. Public Works Department, Parks Department
4. Advisory powers
5. No

Seattle, Wash.

E. BREEN, Executive Secretary to the Mayor:
2. Bridges and thoroughfares
3. City Engineer's Department
4. None
5. No

South Bend, Ind.

CLYDE E. WILLIAMS, City Civil Engineer:
2. Interceptor sewer, sewage-disposal plant, new City Hall
3. City Engineering Department
4. ——
5. No

Spokane, Wash.

H. F. AUMACK, City Plan Engineer:
2. Street widening and traffic safety, street lighting, bridges, intercepting sewers, sewage-disposal plant, water system
3. City Engineer, Water Superintendent, Traffic and Planning Engineer
4. Advisory
5. No

Springfield, Mass.

ROGER L. PUTNAM, Mayor:
2. Bridges, Central Service Building, highways, sewers, parks
3. City Planning Board
4. Full
5. Carrying over balances

Tacoma, Wash.

E. M. WETHERELL, Secretary to the Mayor:
2. Trunk sewer system, streets and bridges, parks and playgrounds, new school and public buildings
3. Representatives of National Resources Planning Board loaned to city and City Planning Committee appointed by the Mayor
4. Very limited
5. No

Toledo, Ohio

J. H. JEWHURST, Director:
2. Various types of construction with paving construction predominating
3. Through WPA cooperation, a list of potential post-war projects has been developed, paving plans being developed by the Engineering Division. No action on other plans at present
4. Advisory and consultant
5. No

Wheeling, W. Va.

WALTER STEGMAN, City Engineer:
2. Projects involving both skilled and unskilled labor and projects involving ordinary materials and some with minimum of materials
3. Engineering Department
4. Must approve projects before they can be started
5. Trying to keep a reserve of cash from revenue received

Youngstown, Ohio

R. W. O'NEILL, Commissioner of Engineering:
2. Grade separation, bridges, street widening, paving, sewers, street openings, central fire station, and swimming pool
3. Engineering Department
4. Suggested planning only
5. No

Salary and Wage Adjustments by Local Governments

MUNICIPAL, county, and state governments may adjust wages and salaries under certain circumstances without prior approval by the National War Labor Board or the Commissioner of Internal Revenue, the two agencies announced in a joint statement on November 13.

Adjustments of wages or salaries requiring approval will be deemed approved if the head of the state or local agency certifies to the Board or the Commisisoner "that such adjustment is necessary to correct maladjustments or to correct inequalities or gross inequities as contemplated by Executive Order No. 9250," the statement read. The certificate must describe briefly the nature and amount of the adjustment and other necessary facts and may be accepted by the Board or the Commissioner, as the case may be, as satisfactory evidence of the facts and of the propriety of the adjustment.

The Board or the Commissioner retain the right to reopen the matter and request further information pertaining to the propriety of the adjustment. Modification by the Board or the Commissioner of action taken by a governmental official or agency under this procedure will not be retroactive.

"The certification procedure," the statement read, "will not apply to any adjustment which would raise salaries or wages beyond the prevailing level of compensation for similar services in the area or the community. In exceptional cases where such an adjustment is sought, and in all cases where the agency seeks an adjustment other than by the certification procedure, application for approval should be filed with the appropriate regional office of the National War Labor Board or of the Commissioner of Internal Revenue, as the case may be."

Under the regulations issued by the Economic Stabilization Director on October 27, the Board and the Commissioner have jurisdiction over any salary or wages paid by . . . any state . . . or political subdivision thereof . . . or any agency or instrumentality of any one or more of the foregoing, except where the amount of such salary or wages is fixed by statute." The term "statute," the joint statement said, as applied to non-federal employees, is limited to an act of a state legislature.

The Board has jurisdiction over all wage adjustments and over salaries up to and including $5,000, except where the salary is paid to an executive, administrative, or professional employee not represented by a recognized labor union. The Commissioner has jurisdiction over all other salaries.

Four copies of each certificate, prescribed in the new procedure, should be filed with the Joint Committee on Salaries and Wages, Room 5406, Department of Labor Building, Washington, D. C., which will forward them to the Board or the Commissioner, as the case may be.

City Liquidates Last Bonds Paid from Taxation

SPRINGFIELD, ILL.—A milestone in the history of Springfield was reached August 29, when the last of the city's bonds being paid from taxation were wiped off the books.

The bonds retired were the final $19,000 of an issue of $200,000 which financed construction of the city's Police Station fifteen years ago.

In announcing the cancellation of the bonds, Finance Commissioner Harry B. Luers said that Springfield thus joined the ranks of the comparatively few cities in the country which have no bonded debt for which taxes are collected.

"According to records in the Comptroller's office," Mr. Luers said, "this is the first time in more than 30 years that the city has not had to levy taxes to pay bonds."

The bonded indebtedness of the Electric Light and Water Departments of the city are retired from the earnings of Springfield's magnificent plants.

Cancelling Springfield's bond. Left: Harry B. Luers, Commissioner of Finance; Right: Mayor John W. Knapp.

Municipal Meat Inspection

By Senator Thomas C. Desmond
Chairman, Committee on Affairs of Cities
New York State Senate

COMPHEHENSIVE meat inspection by municipalities is more urgently needed today than ever before. Limited meat supplies make it more than ever imperative that diseased or unwholesome beef, veal, mutton, and pork be barred from the dinner plates of our people. Yet only one out of every ten cities in the United States requires anti-mortem and post-mortem examination of animals. And even in these cities regulations are often unenforced, inspection staffs are undermanned, appointments are made on a patronage basis, or administration is inept.

Perhaps this municipal lethargy is due to the widespread belief that federal meat inspection is adequate and that no other supervision is needed. It is true that the meat inspection service of the Bureau of Animal Industry of the U. S. Department of Agriculture is highly efficient. Each year the Bureau inspects more than 70,000,000 animals, destroys more than 200,000 carcasses and many hundred thousand parts of carcasses. But federal inspection ordinarily applies only to slaughterhouses and meat packing plants engaged in interstate commerce.* It does not extend to the thousands of concerns of a purely intrastate character. Today 35 per cent of the cattle, 40 per cent of the calves and hogs, and 20 per cent of the sheep and lambs consumed in the United States are slaughtered outside federal supervision.

Thomas C. Desmond

Beating Death to Market

As a result, many of our slaughterhouses and packing plants are storehouses of filth and vermin, lack such fundamentals as hot water and drainage, and use equipment that is rusty and dirty. And great quantities of meat are sold that have never been inspected. The New York State Veterinary Society reports to me that:

> "It is an accepted practice in many parts of the state to try to beat death to the market when an animal is almost certain of dying. The animals are sold at a fraction of their beef value. Pneumonia, traumatic gastritis, metritism, enteritis, and other grave diseases are cheated of their prey by a very narrow margin, by butchers. Where the time does not warrant trucking, the animals are killed, bled out, and the carcasses sold to a dealer for human consumption."

Such practices are in no way peculiar to New York state, and it is obvious that they should be outlawed everywhere and outlawed at once. Never was a higher level of physical fitness and stamina more needed than at the present time.

One might suppose that our states take up the inspection slack. But actually they do nothing of the kind. All but thirteen of the states have adopted laws which in effect say that anyone who sells diseased or unwholesome meat is subject to fine and imprisonment. But most of these laws are as ineffective as speed laws without policemen. Not a single state, except California, has set up compulsory and state-wide

* Federal inspection has recently been extended to include plants fulfilling Army, Navy, and Lend-Lease contracts.

A typical slaughterhouse scene

Disease from slaughterhouse to consumer

meat inspection service. Oregon and Pennsylvania have feeble, voluntary systems under which a packer or slaughterhouse proprietor may obtain state inspection if he will agree to pay for the service. In 1941, New York, under a bill sponsored by the author, for the first time licensed slaughterhouses and compelled them to clean up, but no system of meat inspection was provided. This, in substance, is all our states have done to protect the public from unfit meat.

In the opinion of the author, federal meat inspection should be supplemented by compulsory statewide meat inspection systems to be administered by local governments in accordance with regulations of the state departments of agriculture or markets, with the state engaging in meat inspection in localities which do not have their own inspection service. Since the states refuse to act, however, it is up to the municipalities to introduce their own meat inspection systems while encouraging the state to take some kind of comprehensive action.

Seven Requirements

What are the requirements for an efficient municipal meat inspection service? Experience has shown that the service should do the following:

1. Require that all dressed meat entering the city be inspected by the Federal Government, the state, or the city.

2. See to it that animals are inspected both before and after slaughter.

3. Require that slaughterhouses be kept in a sanitary condition and that inspectors are present at all times during the slaughter.

4. Require condemned carcasses to be so branded and supervised that it is impossible for them to be removed and sold in a neighboring community or to be bootlegged.

5. Require the inspection of meat markets.

6. Place meat inspection and slaughtering under the supervision of a graduate veterinarian selected under the merit system.

7. Require this local meat inspector to make a periodic report available to the public.

Administration of the city's meat inspection service should be under the direction of the local health department. As already indicated, the chief inspector should be a graduate veterinarian, and lay inspector assistants should be well trained and carefully chosen. The expense of the service may be borne by the city or an inspection fee may be charged. New York cities, like Rochester and Utica, charge fees ranging from about 3 to 25 cents depending on the animal slaughtered. These fees are enough to cover substantially all inspection expenses and yet they are not high enough to be a heavy burden on the producer. Federal inspection costs average 7.6 cents per animal with California's state inspection system averaging 7 cents.

It is not possible to estimate accurately the savings in health and money that can be made by a municipal meat inspection service. It is certain that the community will be insured against disease in so far as such disease is associated with meat consumption, and it will also be protected against the inroads of the food pickpocket. Municipal meat inspection is a service from which everyone benefits, including the person whose product is being controlled.

The City of the Future

*Mr. Delano Answers Some Questions Resulting from His Recent Article**

TO the Editor of THE AMERICAN CITY:

1. The rectangular block system should, other things being equal, be oriented with the compass, but the city must of course adjust itself to its location on a river or lake; also to the nature of the terrain—the hills and valleys or the natural beauty of its forests or streams.

2. Street intersections should be as infrequent as possible, with provisions for future separation of grade in important localities.

3. Presumably to carry out the provisions of paragraph 2, yet adjust itself to paragraph 1, the blocks will be long in the direction of chief traffic routes and narrow in the cross-direction. Obviously there is a long-range economy in such a layout.

4. The height of buildings need not be held down if surrounding open space is proportioned to height. No building in the maximum density section of a city should have a floor area exceeding four times the area of the lot or block upon which it is built. This would mean that if only one-tenth of the block were occupied, a height of 40 stories (or say 400 feet) would be permitted, and even greater height might be allowed, if proportionately less of the lot or block were covered. The idea is that skyscrapers should have a large area of land around them.

5. It is recognized that manufacturing or industrial areas shall be provided for, that hotels or apartment houses shall be provided for, that private houses and multi-family houses shall be provided for, but that these various uses shall not be widely segregated or separated in such a way as to make it necessary for people to travel considerable distances from their home to the factory, to the office, or to the shopping district. In other words, residence streets may properly be laid out among office buildings, hotels, or shopping districts—the general objective being that so far as possible a large share of the city's population shall live within walking distance of their work.

6. One of the chief objectives of the suggested limitations in the use of land is to spread the land values more widely—and to a considerable extent prevent either excessively high values in some areas or very low values in others. If four stories were the *average* height limit in the business section of a large city, the maximum land value might be say $40 per square foot, with a minimum of say $1, instead of a value of $400 per square foot as a maximum and almost nothing as a minimum, as we have in some of our cities.

FREDERIC A. DELANO.
Washington, D. C.

* See THE AMERICAN CITY, for October 1942, page 45.

A Prayer

Lord of the far horizons,
Give us the eyes to see
Over the verge of the sundown
The beauty that is to be.

BLISS CARMEN

Further Comments on the Uthwatt Committee Report

By Philip H. Cornick
Institute of Public Administration

THE scope of the report of the Expert Committee on Compensation and Betterment is somewhat broader than either the name of the committee or its "terms of reference" would lead one to expect. It is obvious that the committee assumes that the Parliament will initiate a national planning agency which shall have broad powers of initiative in, and control over, the plans of local agencies. One purpose which underlies this assumption emerges in comments on the necessity for replanning on a national scale, in order to provide for the relocation of the populations of "depressed areas"—notably the submarginal coal mining regions whose problems seem to have defied solution between the first and second world wars, whether by central or local governments, mining companies, miners' unions, or individuals. In passing, it is worthy of comment that in Great Britain, the smaller number of overlapping layers of governments on the local level and the direct relations which already exist between the local and national governments make the problem of exercising national control over local planning much simpler in that nation than it would be under our federal form of government.

The six major recommendations of the committee fall into two broad classes. Of these, four have been designed with a view to establishing, at minimum costs, effective and continuing controls over private land use and development, both in urban and in rural areas. Among these, there is one proposal that when lands acquired by the public are of such a nature as to permit adequate development by private initiative, the lands be leased rather than sold to developers. A fifth outlines a modification and simplification of earlier proposals for the imposition by local governments of annual levies on the unearned increment in the annual site value of land. A sixth proposes recoupment by excess condemnation of the costs of major public works which constitute integral parts of any development or redevelopment plan.

Space will not permit a detailed discussion of these several proposals. One of them, however, is so novel in its approach, and so well grounded in certain basic aspects of widely held economic theory, that it deserves comment here.

The final report of the committee headed by the Hon. Mr. Justice A. A. Uthwatt, presented to the British Parliament in September, is already creating tremendous interest both in England and in the United States. The American City was privileged to publish last month a prompt and comprehensive analysis, by Edwin H. Spengler, of major features of this report. To this we are now glad to be able to add the accompanying further comments, prepared at the request of this magazine by Philip H. Cornick.

Proposal for Purchase of Development Rights

This recommendation proposes "the immediate vesting in the State of the rights of developments in all lands lying outside built up areas on payment of fair compensation." It is based on a recognition of the fact, long accepted by land economists, that the price of a given piece of land is a compound of two distinct elements: first, the capitalization of its actual or potential net land rent which accrues from the type and intensity of use prevailing on comparable lands in its vicinity, plus the present value of anticipated future increases in annual net rents, predicated on a possible change in type or intensity of use.

The committee recommends that the rights which owners of rural lands of all kinds now have to plan on their own initiative for changes in type of use (called the development rights) be acquired under powers of eminent domain throughout the entire nation; that the value of these rights be appraised "globally" on the basis of known facts concerning the rate at which rural lands have been converted to the more intensive urban uses in the past; and that the over-all sum be apportioned as equitably as may be among the owners of rural lands in the country as a whole. By this means, the committee contends, the present owners of the lands affected would be left in undisturbed ownership and possession of their lands for all rural purposes; the nation would own in rural areas all rights of development for non-rural uses; and the central and local planning agencies would be able to proceed with their work without fear that the mere formulation of plans for urban development, redevelopment, expansion, and for the relocation of industries would raise obstacles to the economical effectuation of plans by causing onerous increases in the prices at which the lands needed for the projects could be acquired.

Similar Trends in the United States

American states, counties, and cities are today moving in the same direction through the operation of laws for the reversion to public agencies of lands in arrears for taxes, or for public acquisition by the foreclosure of tax liens. Because of a wholly different procedure for, and public attitude toward, the collection of local taxes in England, this partial remedy for the removal of obstacles to planning and replanning is not available for use in Great Britain. Rural zoning, which is making rapid strides in the United States in the hope that it may introduce a semblance of order into the transition to more intensive types of land use, is rejected by the British committee as not wholly adequate to the task, on the basis of English experience with that device. The proposal for the pooling of individual titles along the lines embodied in our recent acts permitting the creation of redevelopment corporations is also weighed in the balance and found wanting.

This necessarily brief description of the proposal can do little to suggest the scope and sweep of the committee's discussion of it. The plan for appraisal and apportionment may or may not prove workable in practice. Parliament may or may not accept it. In any event, it is safe to predict that the future thinking of economists and planners everywhere will be colored by it for a long time to come.

Copies of the 180-page report of the "Expert Committee on Compensation and Betterment" discussed in the foregoing article are obtainable at 75 cents from the British Information Services, 50 Rockefeller Plaza, New York, N. Y.

The Galveston Plan for Water Supply

Fitting War-Induced Demands to a 25-Year Program

GALVESTON, a city of bold plans that have a habit of materializing, a city of vigorous population growths, for many years has struggled successfully with municipal problems that would have overwhelmed a community less strong. Yet for all its growth and action, this city came to the realization one day that its water supply had been left far behind in the normal municipal developments.

It is not difficult to understand the reason for this. Booming industries and businesses taking advantage of Galveston's excellent port facilities had located and developed in ways that made planning difficult. Along with Galveston's growth came the increase in ease of transportation resulting in suburban developments in areas that even the most progressive-minded planners had difficulty in anticipating.

Moreover, expanding war industries and military establishments have thrown added burden on the already overloaded water department making some immediate solution mandatory.

Galveston's water system furnishes service to all built-up parts of the city proper. The works were established in 1888 and have been enlarged and extended since then. The supply is pumped from eight deep wells in the Basal Beaumont sand, at Alta Loma, Texas, on the mainland about 19 miles from the city. New wells are being drilled to supplement the old ones.

Comprehensive Survey

To correct existing conditions and to prevent the possibility of the water works again developing in an unorganized fashion, the Board of City Commissioners undertook a comprehensive engineering survey. In order to determine what should be done at the present and also plan as intelligently as possible a program for the next 25 years at least, they retained the firm of Ford, Bacon and Davis, Inc., New York, consulting engineers, together with The Pitometer Co., Engineers of New York, to study the entire system.

In determining the present condition of the water system there were many interesting developments that came to light. The expansion of the city has resulted in the construction of many mains in a more or less heterogenous nature, with dead ends and insufficient pipe capacities and also locations at various levels. Street improvements not coordinated thoroughly with the water department would call for an extended fill without regard to the location of existing mains, and subsequent construction would bring in a new duplicate service at a higher elevation.

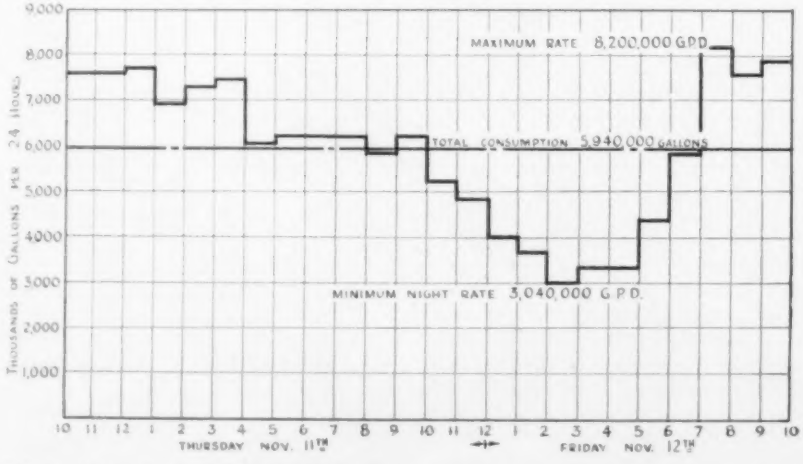
The survey included the location of services not known to exist; the correction of existing maps; the finding of closed, broken, and defective valves; and the testing of the capacity of existing pumping plants. Along with this was a survey conducted by The Pitometer Company to locate underground leakage in the distribution system due to breaks, and also the unauthorized use of unmetered water and the under-registration of industrial meters.

It was disclosed that mains underlying railroad tracks were experiencing a great loss of water, this being caused by the vibration of the ground from the trains. Private unmetered services into warehouses and similar places also accounted for a great loss of water.

The result of this part of the survey disclosed the value of relocating as soon as possible mains that now are under these railroad tracks. It was pointed out that leaks are repaired one day only to start a few days later due to vibration.

Metering

To control the use of unmetered water, the engineers strongly recommended metering of water at the point of entry on the private property, thereby forcing the consumer to keep his water lines in repair and to protect the city from losses due to unauthorized use. If a service is to be of a fire-line type, an appropriate meter should be installed. Various fire lines throughout the city were recommended to be metered immediately in order to



Flow variations for a 24-hour period during Nov. 11-12, 1941, before rehabilitation of the system began. Note that the minimum night rate is more than 50 per cent of the total average consumption. This indicates a large amount of loss through leakage. The night rate on a system in good condition will be less than 30 per cent of this average, and on a system in fair condition will be 40 per cent.

prevent unauthorized and indiscriminate use of water.

Many meters were unsuitable for measuring the types of flows that passed through them. Turbine-type, or large disc meters, were installed in locations having a large variation in flow, with the result that the smaller flows were practically unregistered.

As a general method of keeping the water distribution under control so that the department will know accurately where the water is going, the report emphasizes the importance of metering all services whether the water is paid for or not. This includes water for city buildings, government buildings, cemeteries, hospitals, fire stations, and charitable institutions.

Valves

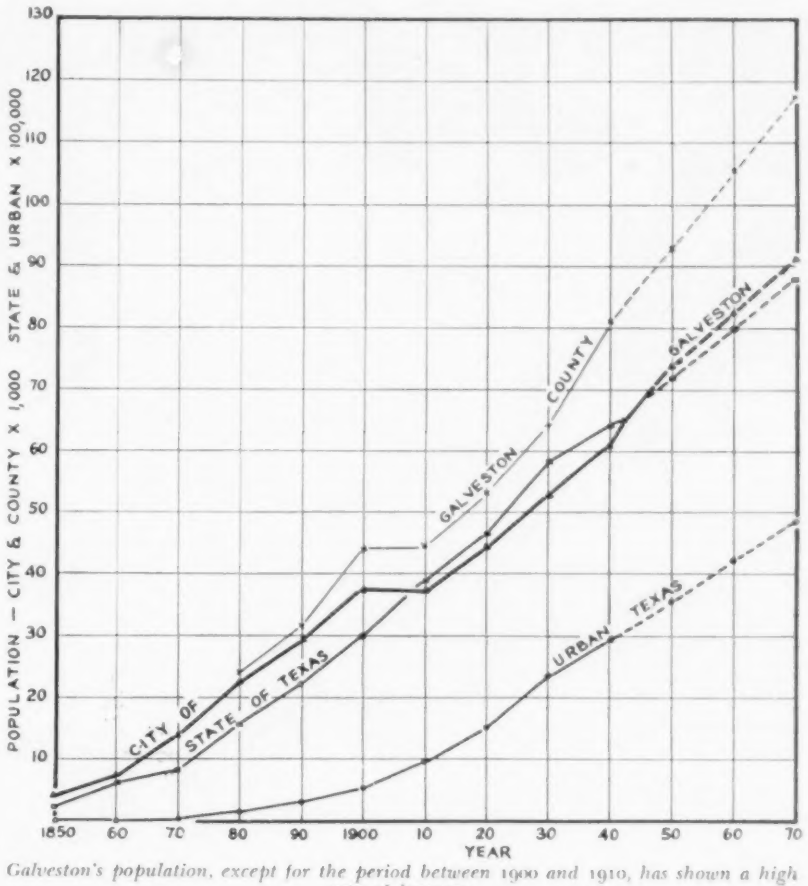
Valves came under extensive study also. Many of these had been neglected far more than the department realized. Consequently they have adopted a system of numbering the valves, listing them by use of card index—the index giving location, size, number of turns, and direction of closure. Also listed is the date that the valves were operated last.

Recommendations that would avoid serious water hammer problems were also made, thereby eliminating shock to the distribution system. More than 1,700,000 gallons of water per day, or approximately 30 per cent, were discovered to be lost. Of this amount, around 86 per cent of the loss was from leaks in the distribution system, the balance being attributed to unauthorized use of the water and under-registration of meters.

Long-Range Program

As soon as city officials put these immediate problems under control, they undertook a long-range study of water distribution developments. The resulting program covers a 25-year period.

With the records available beginning in 1850, the city has shown an increase in population of around 7,000 each decade with the exception of the years from 1900-1910. Graphs of the population increases indicated trends that the city's growth may be expected to follow. To even more thoroughly analyze the growth, Galveston was divided into various sections and each section was studied separately. Some areas were expected to continue their growth, whereas others were estimated to remain stationary and still others to actually show a slight decline. Population for the entire area was estimated to reach 91,000 in 1970.



Galveston's population, except for the period between 1900 and 1910, has shown a high rate of increase.

Average daily consumption per capita varied from 74 to 105 gallons; the maximum consumption varied from 103 to 157. The redesigned system was based on an average consumption of 100 gallons per capita and a maximum consumption of 150 gallons. Trunk main sizes required for fire protection were based on the requirements of the National Board of Fire Underwriters at 8,500 gpm of water available with a 20-lb. residual pressure for the city as a whole. Some variations of this were made on the basis of differences in residential densities.

In anticipating industrial consumption, a thorough study had to be made regarding possible locations. The report anticipated that new industries probably will locate along the existing railroads near the north side of the city or in areas adjacent to harbor facilities.

Water-storage requirements increased problems that needed careful consideration. The National Board of Fire Underwriters in their 1925 report on Galveston specified that it would be desirable eventually to have sufficient water storage on the island to cover five days' maximum consumption plus a ten-hour fire flow demand.

From analyses of existing facilities it became apparent that although additional storage would be desired there is or shortly will be sufficient storage available to take care of all but extreme emergencies, if the influent lines remain intact. The need for having a highly trained staff amply equipped with material constantly at hand soon became evident to preserve this line in case of some type of in-

(*Concluded on page* 81)

PHOTO BY THE ARCHITECTURAL RECORD

Smoke and Soot As Saboteurs

22,000 Workmen and 28,000 Coal Cars Lost for the War Effort

THE perpetual emission of black smoke, soot, fly-ash, and unburned gases from both industrial and domestic chimneys has reached the point now of being a nuisance and a menace to public health as well as an actual deterrent to the war effort. Reports from authoritative sources throughout the country state that the improper combustion in furnaces and boilers is resulting in the wasteful use of fuel, the waste of man-power, and the disturbance of transportation.

Recently V. C. Leach, chief combustion engineer for the Peabody Coal Co., told engineers and power-plant operators at the Midwest Power Conference in Chicago that fuel now is being wasted in this country at the rate of 35,000,000 tons per year because of improper combustion. This is the equivalent of 22,000 men and 28,000 coal cars lost during the year. Dr. Sumner B. Ely, Superintendent of the Bureau of Smoke Prevention, Pittsburgh, Pa., has stated that smoke is as closely related to defense as coal itself. He considers the wasteful use of coal, resulting in smoking chimneys, in much the same light as he does a coal strike—extremely serious now that the entire country is engaged in war industries.

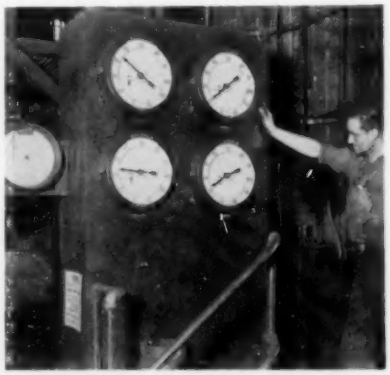
The place of the municipality in this scheme may be seen by the direct appeal made by R. B. Sayers, Director, Bureau of Mines, U. S. Department of Interior. He appealed to cities maintaining smoke abatement departments to increase their efforts and actively consult with industries participating in the war effort in order that valuable fuel might be saved.

Military Hazard

To eliminate the human element from smoke observation, reliable forms of equipment have been developed which measure, continuously and automatically, the density of stack smoke. One form of such equipment, made by the Leeds and Northrup Co. of Philadelphia, consists essentially of a smoke-density sampling manifold, which mounts on the outside of stack or breeching, and a Micromax indicating recorder, which is stationed on the firing aisle where boiler operators can see it easily.

From two points in the stack, the sampling manifold automatically draws a continuously flowing sample of smoke into a sampling chamber, from which it flows back to the stack. Radiation from a voltage-controlled lamp at one end of the chamber passes constantly to a temperature-sensitive detecting element at the other, falling on it in inverse proportion to the density of the smoke through which it passes. The voltage thus generated is measured continuously down in the boiler room by the Micromax instrument, a standard pyrometer calibrated 0 to 100 per cent smoke density. The result is continuously indicated, continuously recorded. The recorder can be equipped to warn automatically of excess smoke by sounding an alarm or by lighting signal lamps. Thus the boiler operator frequently can "see" faulty smoke-density conditions and move to correct them almost before the stack begins to smoke.

Municipal health departments find some ironic satisfaction in this



This operator, by means of these Micromax Recorders connected to Leeds and Northrup smoke sampling manifolds, can fire the boilers in his plant so that the smoke will not be a menace to community health, make the city an easily identified target, or waste valuable coal needed badly in the war effort.

interest in their programs which have had uphill climbs for so many years when they were working for the health of the community rather than the savings in fuel. Many of them remember all too well the marked reduction in the pneumonia death rate that resulted during the depression years, and the increase when these factories returned to operation. They also recount their analyses of the loss of sunshine for school children in industrial, soot-laden sections of their cities. The war impetus should enable these officials to effect now needed reforms that normally would have taken many years to realize.

The encouraging feature of the smoke nuisance is that it can be prevented. When municipalities have been able to persuade industries as well as domestic users of coal to adopt smoke abatement practices by installing proper equipment and using approved firing practices they very often have found their former violators among their most active supporters. Savings in cost are so marked, and the general improvement in the city is so great, that these same people continue the practices with a minimum of additional supervision.

Measuring Smoke

A method of measuring smoke for the purpose of enforcing ordinances has been one of the main difficulties in proper enforcement. To eliminate as far as possible the personal equation, there has been developed the Ringlemann Smoke Chart which divides smoke densities into five grades. The use of this chart requires the use of an observer who will study smoke emitting from some suspected smokestack for a period of one hour under certain fixed conditions. By established methods of computation, this observer is able to obtain a figure that will rate the smoke emitting from this stack, and as a result, give it a case history for future violations.

The line demarking objectional smoke is so slight that it requires an experienced observer to identify it. Most cities consider a smoke density greater than number three as a violation. As a method of identifying this, it can be said that number three density will cut off all light or sky as it leaves the stack. Smoke density rated number two, on the other hand, will allow some of this light to filter through. Density rather than color is the important factor in the measurement of smoke.

This shows the condition of a certain typical Midwestern city a few years ago. At that time, the smoke-laden air, beyond representing an expense to the individuals firing the boilers and furnaces, was chiefly a menace to the community health. Now it is actually a deterrent to the successful prosecution of the war. This condition, incidentally, has been alleviated greatly since the photograph was taken.

Violators cannot hide behind the argument that this blanket of smoke will act as a protective screen and help camouflage the city from possible air raiders. On the contrary, Major A. Williams, well-known aviation writer, states that city smoke can so stain the bottom of a cloud or fog blanket that airmen aloft, flying above these clouds, can identify with assurance the location of the city. This blanket of smoke, instead of being a military asset, is actually a dangerous hazard.

City officials would find it worth while to study the possibilities of such equipment with the idea in mind of requiring its use in certain types of boiler installations. In all fairness to industry it should be pointed out that heating units in apartment houses are equally great offenders and that their inefficient operation results in the waste of fuel as well.

Garbage Collection Ruling

Washington Court Favors City

THAT Wenatchee, Wash., a city of the second class, has the right in the interest of public health and welfare to provide for the collection and disposition of its garbage and that, under the laws of the state of Washington, it is empowered to make a contract for the collection and disposition of garbage was the substance of an opinion recently handed down by the Washington Supreme Court covering collection in this city. *City Sanitary Service Co.* v. *Rausch et ux* (117 P. 2d 22.)

The July 31st issue of the bulletin *Public Health Reports* states that the city of Wenatchee passed a garbage ordinance and entered into a contract granting a corporation the exclusive right to collect garbage within the city for a period of years. After the ordinance was passed and the contract executed, another collection service continued to operate, and the contractor, with the city, brought action to restrain the defendant from doing so. The Supreme Court of Washington affirmed the decree of the lower court which permanently enjoined the defendants from this action.

Meeting a War-Induced Water-Shortage Crisis

An Enlarged Dam and an Emergency Line Tapping a New Source Meet Critical Conditions in Kittery, Me.

MANY cities have been faced with "boom town" growing pains within the past few years, but few have had this condition thrust on them so many times in their history as has the New England town of Kittery, Maine.

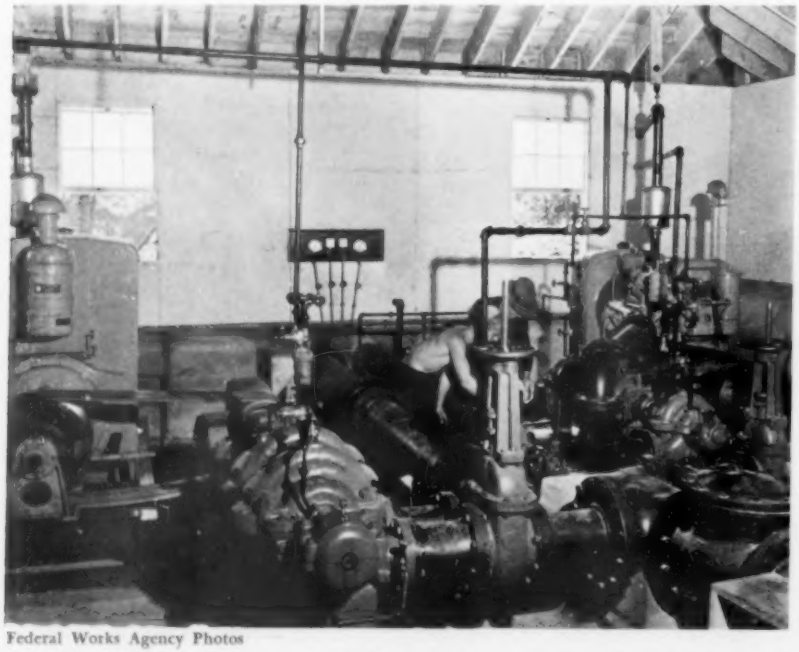
As long as two centuries ago, when America was an unexplored wilderness and Maine was an unimportant English colony, Kittery, little more than an outpost at the time, served as host to Sir William Pepperill's expeditionary force during one of the French and Indian skirmishes. Later, at the time of the Revolutionary War, this town played an important part as a military assembly center. Again, at the time of the Civil War, it stirred into activity with the construction of Fort McClary; and during World War I the town's population almost doubled with temporary war workers. With this as a background, and with America again tangled in conflict, it is no wonder that Kittery philosophically braced itself for the inevitable surge of war activity and all the attendant municipal difficulties.

Population Influx

As in any other emergency, things happened pretty fast. Housing facilities became scarce and critical; schools were crowded; and the little narrow streets bulged unmercifully with traffic. And while worried officials were wrestling with these and other equally aggravating problems, they suddenly found themselves faced by still another situation that threatened not only the health and welfare of the community, but also the progress of the critical war contribution that Kittery was making.

This was a shortage of water. First, the weather, showing an almost unpatriotic lack of cooperation the last two years, had been hot and dry. Next, the demand for water had been greatly increased not only by the added population but by war industry as well. As a result, Kittery's two moderate-sized reservoirs had shrunk to mere swampy puddles. Hard-working officials suddenly realized something had to be done and done quickly.

Under these pressing conditions, the city appealed to the Federal Works Agency for assistance under the Lanham Act. The urgency of the situation resulted in swift cooperation by government officials, and a federal grant of $60,000. FWA engineers visited the area, made test borings and other preliminary studies, and reported on a recommended course of action. Whitman and Howard, Engineers of Boston, Mass., were retained by the Kittery Water District to design the work and inspect its construction.



Federal Works Agency Photos

Looking inside the pumping station at Chase Pond. These Caterpillar diesel-powered Allis-Chalmers pumps will supply water at the rate of three mgd, giving Kittery an emergency water supply until the new dam is constructed.

Requirements Up 50 Per Cent

The town required about 3,000,000 gallons of water per day or about 50 per cent more than its normal demand — requirements that were beyond the capacity of existing facilities even under ordinary conditions. This called first for an immediate temporary supply of water, and second for rehabilitation of the existing reservoir to furnish this supply permanently.

Kittery's water supply consisted of two reservoirs called Folly and Middle Ponds lying about seven miles north of the town. A water shed roughly a mile and a quarter square, lying in Maine's wooded hills, appeared able to satisfy the demands if suitable additional reservoir capacity could be furnished. In the meantime, federal engineers

Walter B. Tyrell, veteran Federal Works engineer, checks the flow from the new emergency line that will replenish the dangerously low reservoir at Folly Pond.

proposed to connect Folly Pond with a reservoir from an adjacent water district by means of a temporary line laid on top of the ground. This called for the construction of a small pumping plant and 2,840 feet of cast-iron bell and spigot line with Leadite joints running from Chase Pond through rough wooded terrain.

The construction of the line was considerably facilitated by the fact that the Warren cast-iron pipe used in its construction already had been purchased by the district. The pipe was laid on the surface of the ground, cribbed into place by timber and stone foundations. Close supervision of the line will be required during the winter months to prevent difficulties from freezing.

The line is to be used for the duration of the war. Federal engineers estimate that with proper care and attention it should last for many years.

Project Completed in Thirty Days

With the urgency of the project so apparent, federal engineers were able to rush this line and pumping plant through in the remarkably short working time of only 30 days. Two pumping units were supplied to perform this work. In order to facilitate continuous operations without the danger of electric power failure, Caterpillar diesel engines were used, belt-connected to two Allis-Chalmers centrifugal pumps. One is a 75-hp unit connected to a 6-in. pump, while the other is a 45-hp engine similarly connected to a 5-in. pump. Both pumps are required if the full 3,000,000 gallons per day must be supplied from Chase Pond.

New Dam

The engineers soon discovered that the present dam located in Folly Pond could not be strengthened sufficiently to furnish the necessary water supply. Therefore, they located below the present site an entirely new dam of a size able to meet the 3,000,000-gallon daily requirements.

This new dam is of gravity section. It is about 21 feet high and 150 feet long and averages 25 feet in width.

Constructed seven feet higher in elevation than the old structure, it will put an additional 200,000,000 gallons of water into storage. Approximately 1,300 cu. yds. of concrete were required in its construction. John MacDonald Construction Co., of Newton, Mass., held the contract to build this project.

Sewage Treatment for Housing Project

A sewage-treatment plant also is being built in Kittery primarily to care for the U. S. Naval housing development. The flat terrain made it necessary to build a pumping station and a force main to convey the sewage to the treatment plant. The pumping station consists of a grit chamber, a comminutor, and two 5-hp electrically driven Chicago pumps capable of handling 300 gpm each. One 20-hp pump also was planned for the station, but in order to conserve on critical material its installation has been temporarily delayed.

Primary treatment and post-chlorination is furnished at the treatment plant through a small Imhoff tank. Sand filters and a sludge lagoon also are supplied. Effluent is discharged through a submerged outlet pipe.

The plant will operate separately from the city's general sewerage system.

Personnel

The work was under the general direction of J. A. McConnell, Assistant Regional Director, Federal Works Agency, Region Number One. Walter B. Tyrell was the construction engineer representing FWA on the job. Whitman and Howard, Engineers, Boston, Mass., were retained as consulting engineers to design and supervise the project. Francis L. Hatch is Water Works Superintendent for the Kittery Water District serving the municipality.

This gravity dam, now under construction, with a spillway 150 feet long, is seven feet higher than the old dam that it replaces, and will make an estimated 200,000,000 gallons of water available to the town.

Zoning Committee Ends, Its Task Well Done

ITS major purposes accomplished throughout 26 years of effective civic service, a unique citizens' committee has announced the termination of its formal activities with the end of the present month. This is the Zoning Committee, a voluntary group of New Yorkers which has helped write an important chapter in nation-wide civic development by the democratic process of discussion and legislation.

As readers of THE AMERICAN CITY are aware, New York was forced to pioneer in zoning because of the unusual problems of congestion induced by tall buildings, the advent of subways, the shape of Manhattan Island, and the intrusion of factories. When the dual subway was being constructed George McAneny, then a member of the Board of Estimate, proposed a special study on heights of buildings. A commission was appointed, of which Edward M. Bassett was chairman, and after a year of study this commission made its recommendations in December, 1913. A second commission then prepared the plan which constituted the basis for the Zoning Resolution adopted on July 25, 1916.

The Committee's Personnel

This 1916 Resolution was the first comprehensive zoning plan in the country that regulated height, area, and use of buildings and land. Based on police power, it was in grave danger, in the opinion of many authorities, of being invalidated by the courts. On December 7 of the same year, therefore, the Zoning Committee, first called "The Committee to Protect the Zoning Resolution," was organized. Moving spirits behind its organization were Frederic B. Pratt, Lawson Purdy, Edward M. Bassett, and Herbert S. Swan. Original members of the Executive Committee were Robert S. Binkerd, J. Howes Burton, Joseph P. Day, Robert W. de Forest, Otto M. Eidlitz, Arthur Lehman, Frederic B. Pratt, Lawson Purdy, Robert E. Simon, and Walter Stabler. Later members have included John L. Gibbons, Peter Grimm, Harold M. Lewis, Edwin P. Maynard, William J. Pedrick, Nathaniel D. Reich, and George J. Ryan.

Frederic B. Pratt, who took the initial steps to crystallize public opinion in support of the zoning program, became the original chairman of the Committee, a position in which he has continued to serve throughout its existence. Lawson Purdy, who had framed the charter amendment authorizing zoning and was vice-chairman of the two official commissions preceding the adoption of the zoning resolution, has been the permanent vice-chairman of the Zoning Committee. Its Counsel, Edward M. Bassett, was by reason of his position its most active member, and through his many services to zoning became the best-known authority on this subject in America.

Immediately upon organization, the Committee began to center its efforts in protection of the Zoning Resolution in two forms of activity: giving expert advice on zoning matters, without cost, to officials and citizens within the New York region; and spreading the principle of zoning by all appropriate means to municipalities in other states, so that the courts might be less inclined to rule against it as an isolated use.*

A Dramatic Struggle

Records of the Committee portray an early struggle not lacking in dramatic moments. Within New York, zoning was frequently attacked, but never declared unconstitutional. It suffered serious setbacks under a hostile city administration, however, and was perhaps saved only by the efforts of the Zoning Committee seconded by the strong support of citizens, who came before the Board of Estimate in crowds to maintain the protection of their property which zoning afforded. During this period Herbert S. Swan, Executive Secretary of the Zoning Committee from 1916 to 1919 and subsequently its Consultant, was especially active in supporting the work.

Outside New York the history of this new invention for preserving human and economic values in cities was even more checquered. Thanks in good part to the work of the Zoning Committee, whose Counsel traveled widely lecturing on the advantages and possibilities of zoning and preparing news releases, magazine articles, and other explanatory material, many municipalities in many states became interested. However, while the courts in New England and New York and in general in the Middle and Far West supported zoning, serious adverse decisions were encountered in the states along the coast from New Jersey to Texas.

U. S. Supreme Court Turns the Tide

After the courts of New Jersey had thrown zoning out in the Nutley decision, which declared that the attempt to exclude a grocery store from a residential area was based on esthetic considerations and not health and safety, concern arose for the future of the whole movement. Fortunately, the Supreme Court of the United States shortly afterward announced a favorable decision in the Euclid Village (Ohio) case, in which the Court had the assistance of much material from the files of the Zoning Committee. This case before the Supreme Court marked the turn in court attitude on the subject, and soon an impressive number of favoring decisions were recorded, and the attitude of the state courts became much more liberal even toward specific provisions of zoning ordinances.

A "zoning round table," which Mr. Bassett conducted for 15 years at meetings of the National Conference on City Planning, brought zoning problems and developments before those professionally interested. Another landmark in the spread of zoning nationally was the preparation of the Standard State Zoning Enabling Act, under the Department of Commerce, with the Zoning Committee's Counsel serving as an adviser. Today more than 1,750 municipalities have adopted zoning ordinances.

Sources of Funds

The Zoning Committee's financial support has come through various sources, including the Russell Sage Foundation, John D. Rockefeller, Jr., the Fifth Avenue Association, the Metropolitan Life Insurance Company, J. P. Morgan, E. C. Blum, Joseph P. Day, Harold I. Pratt, Alfred T. White and family, the Brooklyn Trust Company, and other individuals and organizations for briefer periods.

The Committee concludes its efforts in the knowledge that the principle of zoning has now been firmly established in the United States and its major objectives have been soundly accomplished. The ending of its formal work is an event of more than local importance, since for nearly a generation it has exercised outstanding leadership in advancing the principles of zoning throughout the nation.

* Not the least important of the Zoning Committee's services has been its cooperation with Frank B. Williams, whose department of Zoning and Planning Notes has been a monthly feature of THE AMERICAN CITY for the last 18 years.

Quotable Thoughts
for your Talks and Reports

Installment No. 2 of a Monthly Department of Ideas, Old and New, for Public Speakers and Report Writers.

The Privilege of Civic Service

There is an old Greek proverb which says, "To make our city loved we must make it lovely." That should be both a duty and a privilege. If we love our town we will want our children and our children's children to love it also, and the only way to make sure of this is to follow the motto and make it such a town that they cannot help loving it. . . .

Mr. G. K. Chesterton in one of his illuminating paradoxes says, "Men did not love Rome because she was great; she was great because men loved her." This statement is the complement of the Greek proverb; for some cities there does come a time when they are loved for their greatness or their beauty, but it has to be preceded by a creative period in which the city needs the sacrificial love of all its inhabitants, a period in which men and women are willing to give their time, their knowledge and their zeal in a great effort to create a city which shall give expression to their ideals.

ROBERT H. MATTOCKS,
President, Town Planning Institute of Great Britain

" "

Give me libery to know, to think, to believe, and to utter freely, according to conscience, above all other liberties.—JOHN MILTON.

" "

What Did We Give Today?

We shall do much in the years to come,
But what have we done today?
We shall give our gold in a princely sum.
But what did we give today?

NIXON WATERMAN

" "

All that is needed to remedy the evils of our time is to do justice and give freedom.—HENRY GEORGE ("The Condition of Labor")

" "

Freedom and Performance

Do we have to choose between power so centralized as to be a threat to freedom and power so diffused as to be a threat to performance? . . .

All this, then, is the warning of European totalitarian experience. It bids us beware, on the one hand, of too much power at the top level of government; and on the other, of power insufficiently centralized to meet the typical administrative problem at the federal level. . . .

Sound procedures, adroitly devised, are one half the solution of the vast problem of power. But inescapably, the other half of the solution is to enlist and sustain good will, along with good method.

ORDWAY TEAD
President, Board of Higher Education, City of New York (in *Survey Graphic*)

A Post-War Challenge

Were half the power that fills the world with terror,
Were half the wealth bestowed on camps and courts,
Given to redeem the human mind from error,
There were no need of arsenals or forts.

HENRY WADSWORTH LONGFELLOW
("The Arsenal at Springfield")

" "

Leadership That Leads

Unless the agencies of popular will can legislate appropriately and administer efficiently, then democratic forms will perish, no matter what oceans of ink are spilt and what flowers of eloquence bloom in their defense.—CHARLES A. BEARD (1939).

" "

The particular quality of leadership which belongs to the second half of the twentieth century . . . is something difficult to define but easy to recognize. It is the power to hold confidence while being capable of of audacity.—DOROTHY THOMPSON (1940).

" "

Democracy is a way of life whereby all men may achieve the fulfillment of being themselves. That is why the morality of the democratic idea is the center of all thought for free men today and the burden of their hope and their efforts.—ERWIN EDMAN.

" "

True When Lincoln Said It—True Again

The dogmas of a quiet past are inadequate for our stormy present. The occasion is piled with difficulty, and we must rise to the occasion. As our case is new, we must think anew and act anew. We must disenthrall ourselves.

Fellow citizens, we cannot escape history. . . . This fiery trial, through which we pass, will light us down in honor or dishonor to the latest generation.—ABRAHAM LINCOLN

" "

History is coming to be a race between education and catastrophe.—H. G. Welles

" "

Mothers of Men

The bravest battle that ever was fought;
Shall I tell you where and when?
On the maps of the world you will find it not;
It was fought by the mothers of men.

Democracy's Dependence on Local Government

"The good life" was developed long ago and christened democracy. With that birth and baptism, came a recognition that the survival of that way of life depended on the common man's desire to maintain it.

Just as an army in the field is dependent on the buck private, so does the fate of the army at home rest upon ordinary people. Their fate in turn depends upon the efficiency with which organization and administration are conducted by their locally elected and appointed officialdom. Indeed, everyone shares an important and serious responsibility in this effort. This must be true, for this is not only the theory of democracy, but the translation of that theory into action that must be unconquerable in power. And today as Americans it is action that is needed. We must transform loud voices into action, anger into deeds, contentiousness into fight, and clamor into cooperation.

JAMES M. LANDIS
Federal Director of Civilian Defense (before the New York State Conference of Mayors June, 1942)

" "

The safety of the state is the watchfulness of the citizen.—Inscription over the entrance to the State Capitol at Lincoln, Nebr.

" "

Public Works and Free Enterprise Must Work in Harness

The people of this country are fighting this war for a better world in which to live. They would like to get it through democracy, liberty and free enterprise. But they are determined to have this better world of greater security one way or another, and if they don't get it through present principles they will look elsewhere. The handwriting is on the wall. We either must cut the cloth to fit that pattern or the reformers and demagogues will. We can point to past accomplishments of free enterprise until hell freezes over, but people are concerned about the future, not the past.

WALTER D. FULLER
President, Curtis Publishing Company

" "

The pessimist sees a difficulty in every opportunity. The optimist sees an opportunity in every difficulty.—BISHOP THOMAS NICHOLSON

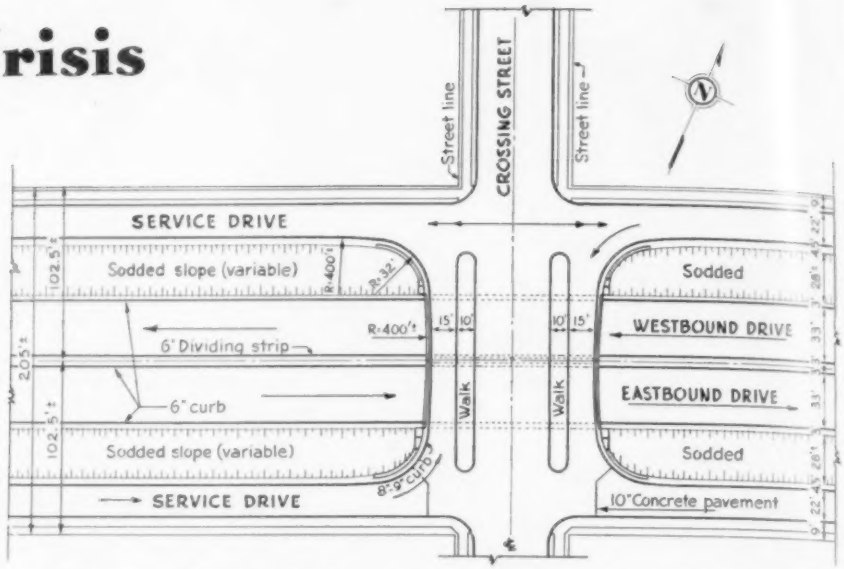
" "

The Days That Are to Be

These things shall be—a loftier race
Than e'er the world hath known shall rise
With flame of freedom in the souls,
And light of knowledge in their eyes.

JOHN ADDINGTON SYMONDS

Transit Crisis Drafts Wartime Street Project



This diagram shows how the through traffic connecting two of Detroit's industrial centers passes under the already heavily traveled street crossings.

This new $1,4000,000 Limited Traffic Way, now being completed in Detroit, will play a vital part in carrying essential war materials and workers in this congested area

HERE is a street project that was enrolled in the war effort. Many municipal developments, part of cities' long-range planning programs, have been forced into retirement for the duration. However, Detroit's Davison Avenue street improvement, in contrast, has been stepped up to meet an aggravated problem brought on by war industry.

Although this improvement is only 7,000 feet in length, it connects two highly industrial sections of Detroit and carries a large volume of truck traffic. It runs through Highland Park in an east-west direction and crosses seven heavily traveled streets. Traffic counts show that 95 per cent of the vehicles using this route are through-traffic Detroit cars.

Traffic on this avenue has been increasing yearly, and this project represents the normal peacetime development planned for the city by the Wayne County Road Commission. However, the surge of industrial activity brought about by the war has increased traffic so greatly that the street reached its saturation point, and since that time residential side streets have been forced to carry an appreciable portion of the load.

Handling Traffic

Three 11-ft. lanes of traffic were provided in each direction. These two 33-ft. strips were separated by a 6-ft. dividing strip planted with grass and low shrubbery. Traffic on these express areas is carried below the normal street elevation, with the traffic from the seven cross streets passing over them on rigid frame structures. Local service traffic is carried on streets con-

Seven rigid frame concrete bridges carry cross-traffic over the depressed roadway. Four of the concrete bridges are single span and three others, carrying street cars, are double span.

structed at the normal level at each side of the avenue. These service drives are each 22 ft. in width and are flanked by sidewalks.

Widening for bus stops was accomplished at Woodward Avenue at the center of the project. Stairways were constructed at each corner of the Woodward bridge. Also in one section the service drives have been widened to permit parking for the shopping district.

The total width of the improvement is 205 feet measured from property line to property line, except at two locations where large buildings would have had to be wrecked to accomplish full widening. Here, retaining walls were substituted for the sodded slopes normally used. At the right of way the width is 290 feet to provide for interchange drives.

The rigid frame crossings carrying traffic over the express highways were constructed half at a time in order to permit early cross traffic. Here is one that is just being completed.

Steel Saved

In keeping with the times, all the work was designed with a minimum of steel. Paving sections were 10 in. thick and of unreinforced concrete mixed to proportions of approximately 1:2¼:3½. Traffic separations were designed as rigid frame structures, and here again careful design made it possible to save an appreciable tonnage of steel. In constructing these structures the contractor originally ordered the bars bent at the mill to the shape required in the plans. However, his experience in handling these large, unwieldy, preformed bars convinced not only him but the engineers as well that some other method would have to be adopted. Thereafter the contractor ordered the bars cut to length but not bent. This made them easier to ship and store on the site. Furthermore, by resourcefully making his own bending templates and equipment, he shaped them easily to the required dimensions.

Concrete for the footings was designed for a strength of 2,500 lbs. per sq. in. Superstructure concrete was designed at 3,000 lbs. per sq. in. In actual test the footing concrete showed a strength of 3,100 lbs. and the superstructure concrete a strength of 3,600 to 4,500 lbs. Internal vibrators were used in placing this concrete.

Paving constituted one of the major portions of the project. The main sections consist of two 33-ft. strips, each poured in two sections, one 22 feet, and one 11 feet. To accomplish this construction, the contractor used a Foote and a Rex 27-E pacers, a Heltzel subgrader, and two Lakewood finishing machines. At the proportioning plant he used an electrically locked Butler cement bin and a two-compartment 75-cubic yard aggregate bin.

Existing underground utilities presented difficulties. Water, sewer, gas, electric, and telephone lines all had to be moved. Storm sewers presented their particular problems since the street was lowered to such an extent that the gravity system no longer would work. Four pumping plants were installed to take care of this water, delivering their flows to 10-in. mains.

The total cost of the project was $3,400,000, of which the construction, engineering, and administration counted for $2,000,000. Ten separate contracts were involved. An original priority of A-10 was later changed to A-4 as the need for this project grew more apparent.

The project was under the direct supervision of LeRoy C. Smith, Wayne County Highway Engineer, assisted by Harry A. Shuptrine, Bridge Engineer, and Frederick S. Roser, Bridge Superintendent.

Land Policies for Post-War Urban Development

Proposals for Public Aid to the Housebuilding Industry

"*At the right terms and prices the country could absorb anywhere from* 900,000 *to* 1,200,000 *new dwellings a year for the decade after the war. . . .*"

This estimate of a probable market—well beyond the production of any previous decade—and suggestions for atttaining it by an overall program engaging both public and private resources—are set forth by Miles L. Colean in a report on "The Role of the Housebuilding Industry," released on September 13 by the National Resources Planning Board.

Land Acquisition

The need for overcoming present difficulties in obtaining land is stressed:

Out of an age-long faith in the continual increase in land values and of zoning and assessment policies that often tend to perpetuate this fiction, conditions have developed that render unavailable quantities of land lying close to centers of trade and employment. Difficulties in reassembling land once it is in scattered ownerships prevent the reuse of often well-located sites now in blighted areas of defunct subdivisions.

The search for cheap land consequently carries development outward beyond the areas affected by these disabilities. Since outlying areas appeal chiefly to home purchasers, the outward movement tends to neglect new rental development. Unless the outward movement is accompanied by a similar migration of industrial and commercial development, loss of the ordinary community services and the added costs of transportation may diminish the savings initially obtained from cheap land. Where new community services are provided, the result is often a duplication of partially used or unused services closer in. Thus, the present trend creates urban waste and disintegration and not infrequently adds to rather than solves the problems of a balanced supply of housing. . . .

Low-cost housing must have land at low cost—yet suitably located and suitably serviced. Builders of houses must have reasonable protection in the holding of land during a period long enough to complete an integrated neighborhood development (some of the most forward-looking developers have been ruined by the burden of a land inventory during a period of depression). Investors in houses must have protection in the use of land during the reasonable physical life of the house (it is a common observation that decline of the neighborhood destroys value more rapidly than does the deterioration of the house itself).

Vital as the land question is to the future of housing, its ramifications reach so far into our concepts of property and spread so widely through the whole structure and economy of our cities that it is far more than a housing question. It must be approached from more than one base, and its solution must take care of a whole congeries of urban problems. Although housing must await the issue of this broader approach, the crucial bearing of the land situation upon the prospects of an increased production of houses cannot be overemphasized.

Here is an area in which the need for an extension and strengthening of public jurisdiction and control can hardly be denied. Legitimate building enterprise cannot be harmed by a more exacting regulation of land subdivision, provided of course, the regulation is in the interests of the people as a whole and not, as often happens in our so-called high-class suburbs, for the benefit of a select group. Legitimate building enterprise cannot be harmed by the accumulation of municipally owned land reserves. On the contrary, such measures might be stimulative.

To Eliminate Speculations in Reassembled Areas

Free and unlimited trading in land is not an essential part of housebuilding enterprise. In fact, the land trader may be a serious deterrent to enterprise. Increases in acreage prices of 100 to 200 per cent, such as occurred in the Washington area within a year's time after the beginning of war preparations, can hardly be called an aid to the development of low-cost houses. Industry must also look to public aid in the reassembly of scattered ownerships in slums, blighted areas, and defunct subdivisions, if it is to serve in the comprehensive rehabilitation of these sections. And here again it would not be harmed if private land trading were henceforth eliminated from the reassembled areas.

Immediate Action for Post-War Readjustments

Twelve possibilities for immediate or long-range action are summarized in the pamphlet. Those of special interest to local government include:

Preparation by the Federal Government of model building codes based on ample engineering service and providing to localities facilities for consultation and testing.

Support of the housing market as may be needed by the continued purchase by local housing authorities, under a coordinated federal program, of dwellings for the low-income groups.

Reform of methods of real estate taxation to remove the special hazards to the ad valorem levy.

Simplification of methods of land transfer through the establishment by the states of simple and compulsory methods of land title registration. This move might be stimulated by the Federal Government by aid in establishing indemnity funds.

Development by the states of better methods of land-use control, slum and blighted land assembly carried on under the auspices of the Federal Government, using not only governmental facilities but the facilities of universities and other competent private research centers.

In conclusion, Mr. Colean says:

"The short- and long-term parts of the program must be developed as a whole. One need not be deferred for the other, but both should be instituted and carried out together, the second group serving to provide more sustained benefits as the stimulus of the first reaches its peak. In no other way can the emergency be turned to long-term advantage, or the creation of new problems out of each partial short-term solution be prevented. . . ."

"In order to expand the place of housebuilding in the economy as a whole and to prevent it from acting as a major drag in an unsettled period, nothing short of a drastic reorganization of the industry and a reorientation of its market viewpoint must be faced. The means for accomplishing this are available and the beginnings of an industrial revolution are struggling for recognition. If we want housing badly enough we can have it!"

The "All-Purpose" Local Authority

A Significant Proposal from Great Britain

By THOMAS H. REED
Municipal Consultant

BRITISH local government officials in the midst of war are doing some hard thinking about the future of local government. *Local Government Service*, the bulletin of the National Association of Local Government Officers, shows the effect of war shortages in its cheap newsprint and crowded format, but it exhibits no shortage of ideas. In its August issue, there is presented a summary of a very significant report adopted by the Association of Municipal Corporations, which would revolutionize the areas in which local government has been provided on both sides of the Atlantic.

This report has nothing to say about the *organization* of local government authorities except that "all forms of local government authority must continue to be democratic in constitution and in operation and the elected representatives must retain effective control over the services for the provision and administration of which they are made responsible by Parliament." Otherwise the AMC would leave local authorities to be governed in the traditional British manner, through a decentralized committee system and without a chief executive.

It is in the field of *areas* that the report breaks new ground. There it proposes to substitute, as far as possible, for the present complex and illogical arrangement of local authorities, all-purpose areas comprising "both rural and urban lands, containing a well-balanced grouping of all classes in the social scale, and in which there is a reasonable spread of industry, commerce, residence, and agriculture. . . ." The only admissible exceptions to this new pattern of local government, it holds, are to be found "in those parts of the country where there are (a) vast tracts of rural lands and (b) large urban conurbations." *Ad hoc* bodies administering special services, it is suggested, would then become unnecessary.

The report is indefinite as to the optimum size of these all-purpose areas, merely suggesting some rather vague standards by which their boundaries might be determined, such as suitability for economical and efficient administration of public services; adaptability for such specialized services as hospitals and institutions for higher education; adequacy of financial resources; and availability of suitable persons for election to its governing body. It is to be presumed, however, that these areas would be of considerable size and population, grouped around the larger boroughs of the kingdom. It could only be in this way that financial and administrative self-sufficiency would be possible. It is also very interesting to note that the report strongly rejects the idea of intermediate regional governments long advocated by G. D. H. Cole. "We also," says the report, "regard it as important that any local authorities of whatever kind should have direct access to the central departments of government without the intervention of regional or subsidiary bodies of any kind." Such a position could be best sustained by local units of considerable size.

The Case for Combining Urban and Rural Territory

The most vital point in these recommendations is the combination of urban and rural territory in the same all-purpose unit. This runs counter to both British and American practice. The report puts the case for this combination in these words:

> The desirability of such a course lies in the fact that the rural areas of this country are not sufficiently self-supporting to provide all the local government services required without the assistance of the urban communities and, as a result, rural areas do not normally enjoy the same highly developed services as urban areas. But it is clearly desirable that the benefits of all local government services should be within the reach of all members of the community, irrespective of the nature of the area in which they reside.

This the report considers can best be done by uniting urban and rural areas in a single all-purpose unit.

The above makes strange reading for American eyes. It ignores entirely the ordinarily deeply marked difference in both needs and desires of rural and urban populations. Rural areas, as we know them, do not require the same services as urban areas, nor do they want to pay for them. If the argument of the report is genuinely applicable to British conditions it must be because British population, except in a few remote sections, is so dense as to abolish the distinction between urban and rural which exists with us.

We have had in the New England towns these all-purpose units which embraced both village and countryside and they have worked satisfactorily on the whole, but not wholly without friction. There is no doubt they worked better under the simple conditions of a hundred years ago than they do today. In the case of a few large cities (New York, Baltimore, Philadelphia, San Francisco, St. Louis, and Denver) we have urban all-purpose units. Virginia, where every city of over 10,000 population is a county by itself and where a workable annexation act prevents urban conditions from being permanently maintained outside municipal boundaries, has separate all-purpose units for town and country. There are in some of the Western states counties without incorporated places, or special school districts where the all-purpose ideal is attained.

But in this country, as in England, the rule has been to combine urban and rural areas for certain purposes in counties, thus giving the rural areas the inestimable if undeserved advantage of taxing urban property for some rural services and improvements. This worked so badly from the urban point of view that on both sides of the Atlantic the cry for city-county separation was raised to high heaven. The results here were limited to the few large cities listed. In England, down to a quarter of a century ago, county-boroughs were so freely created as to threaten to ruin the financial resources of many counties. The intervening period has produced the proposal of the AMC's report, which may be interpreted either way—as turning the cities into the county areas or the rural areas into the cities. It will be interesting to watch the fate of this plan in Britain. Certainly nothing will come of it until the war is over.

17,800 Units Instead of 165,000?

In the meantime, we have Professor William Anderson's proposal* for this country, which would reduce our 165,000 units of local government to 17,800; 200 city-county units with a central city of at least 60,000; 2,100 other counties; 15,000 incorporated places; and 500 miscellaneous units. He has turned the trick rather neatly by wiping out all school districts—nearly 120,000 of them, besides townships and special districts. Under his proposals, however, except for 200 all-purpose metropolitan areas, a dual system would prevail of county government overlapping incorporated place government.

We can accept the all-purpose government as the ideal solution of the government of metropolitan areas, although it would seem to require a differential in taxation based on the degree of service rendered between built-up and outlying portions of the unit—an obstacle which the British report finds it possible to ignore. In the wide reaches of some of the Western states and in the sequestered hollows of the southern Alleghenies the much enlarged rural all-purpose units imposed by law or induced by conditional grants from the state and Federal Government represent the only valid solution to the problem of local government. We may expect, however, continued proposals for the federated or borough plan of dual metropolitan government; and in the rest of the populated sections of the country we shall be very lucky if we get the normal number of overlapping units levying taxes on the same property cut to two.

* "The Units of Government in the United States," by William Anderson—see page 95 of the November issue.

To Reduce Juvenile Delinquency

A STUDY of rates of juvenile delinquency in relation to differential characteristics of the various neighborhoods in American cities has been published by the University of Chicago Press.*

In this important study, juvenile delinquency is shown to be highly correlated with a number of presumably separate factors, including: (1) population change, (2) bad housing, (3) poverty, (4) foreign-born and Negroes, (5) tuberculosis, (6) adult crime, and (7) mental disorders.

According to the introduction to the book by Ernest W. Burgess of the University of Chicago:

"The correlation of juvenile delinquency is so high with each of these that if any one were considered separately from the others it might be deemed the chief factor in juvenile delinquency. Since, however, juvenile delinquency is highly correlated with each of them, then all of them must be more or less intercorrelated. Therefore, all these factors, including juvenile delinquency, may be considered manifestations of some general basic factor. The common element is social disorganization or the lack of organized community effort to deal with these conditions. If so, the solution for juvenile delinquency and these related problems lies in community organization. Juvenile delinquency, as shown in this study, follows the pattern of the physical and social structure of the city, being concentrated in areas of physical deterioration and neighborhood disorganization. Evidently, then, the basic solution of this and other problems of urban life lies in a program of the physical rehabilitation of slum areas and the development of community organization. . . .

Four Essentials

The plan of a neighborhood housing project most favorable for community organization should include the following:

"1. An area of sufficient size for a population necessary to maintain an elementary school—typically, an area of one-quarter square mile.

"2. Traffic streets routed around, not through, the area, so as to safeguard its residential character.

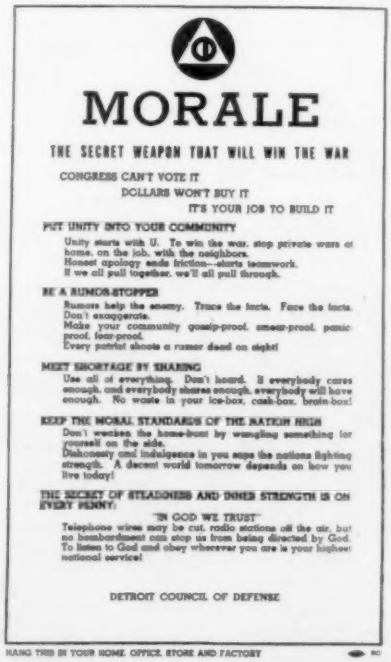
"3. Businesses located not within the neighborhood but restricted to points on the through-streets around it.

"4. A small park or playground at the center of the neighborhood around which are located the institutions of the neighborhood — school, church, community center, etc.

These physical conditions supply a favorable structure for neighborhood organization; they do not necessarily insure it. Conscious planning, in addition, is necessary.

* "Juvenile Delinquency and Urban Areas," by Clifford R. Shaw and Henry D. McKay—see page [illegible] of this issue.

To Aid Wartime Morale



MORALE

THE SECRET WEAPON THAT WILL WIN THE WAR

CONGRESS CAN'T VOTE IT
DOLLARS WON'T BUY IT
IT'S YOUR JOB TO BUILD IT

PUT UNITY INTO YOUR COMMUNITY

Unity starts with U. To win the war, stop private wars at home, on the job, with the neighbors.
Honest apology ends friction—starts teamwork.
If we all pull together, we'll all pull through.

BE A RUMOR-STOPPER

Rumors help the enemy. Trace the facts. Face the facts. Don't exaggerate.
Make your community gossip-proof, smear-proof, panic-proof, fear-proof.
Every patriot shoots a rumor dead on sight!

MEET SHORTAGE BY SHARING

Use all of everything. Don't hoard. If everybody cares enough, and everybody shares enough, everybody will have enough. No waste in your ice-box, cash-box, brain-box!

KEEP THE MORAL STANDARDS OF THE NATION HIGH

Don't weaken the home-front by wangling something for yourself on the side.
Dishonesty and indulgence in you mean the nations fighting strength. A decent world tomorrow depends on how you live today!

THE SECRET OF STEADINESS AND INNER STRENGTH IS ON EVERY PENNY:

"IN GOD WE TRUST"

Telephone wires may be cut, radio stations off the air, but no bombardment can stop us from being directed by God. To listen to God and obey wherever you are is your highest national service!

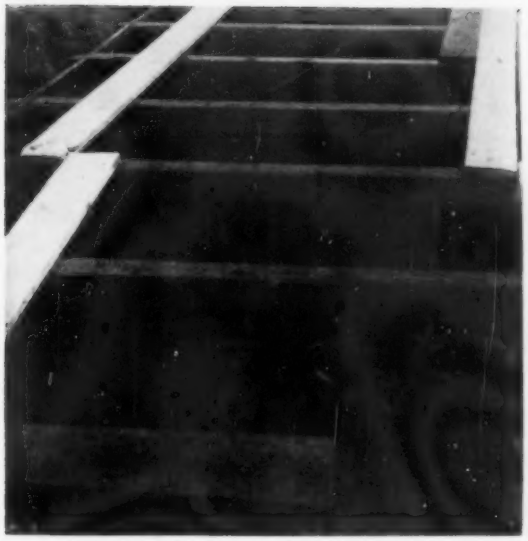
DETROIT COUNCIL OF DEFENSE

HANG THIS IN YOUR HOME, OFFICE, STORE AND FACTORY

This is the Detroit version of a morale-building appeal to maximum wartime service that has had widespread distribution, through the newspapers and by governmental and civic groups, in many cities throughout the United Nations.

"Duration" Sewage Treatment

Baltimore Solves Sewerage Problem with a Small Treated Wood Plant Without Drawing on Critical Material



Cross-bracings and heavy compression members strengthen the unit.

A low-cost housing project that was built recently in Baltimore, Md., while being favorably and strategically located as to street-car and highway service, presented difficulties in regard to its sewage treatment. Lying in a relatively low section of the town, it would have required under normal conditions the pumping of the sewage to gravity conduits in order to reach the city treatment plants.

However, the present shortages of materials and the difficulties of construction practically eliminated the possibility of such a pumping station. Even under high priority, the Bureau of Sewers in Baltimore considered it best to postpone such a force main until after the war.

In studying the possibilities still remaining, it became apparent that a temporary septic tank large enough to take care of this 300-family housing development would be required. The possibility of directing the sanitary sewage into the existing storm sewers was studied, as an emergency measure, but it did not receive a favorable reaction.

In order to construct the septic tank economically and quickly with unskilled labor, the Bureau of Sewers gave its approval to the use of pressure-creosoted wood as a building material for this sewage-treatment unit. The low initial cost and the life-expectancy of this project, not over 20 years, also were factors in this selection.

The unit was designed by the Henry Building Company, a Baltimore contractor constructing this development. The tank was divided into two sections each 8 x 32 x 16 feet in depth. It is interesting to observe that this extreme depth was not required by the number of units served, in fact a volume of half that size would have served adequately. However, the gravity lines made the depth necessary in order to induce flow, and cost estimates showed conclusively that it was more economical to extend the tank to the surface than to construct, at 8 feet below the surface, a cover strong enough to carry this overburden. In actual practice, the tank is filled only to a depth of about 8 feet.

The walls were designed to withstand maximum external and internal loads, the center portion being constructed strong enough to carry a full load in half of the tank while the other half was being cleaned. The walls were built of 2-inch tongue-and-groove planking strengthened with 4 x 6 inch studs inside and out. The upper half of the tank was strengthened by compression members, 6 x 6 inches in size, and 1 x 10 inch diagonal cross-bracing. This lumber was Southern yellow pine, pressure-treated according to American Wood-Preservers' Association specifications which required 8 pounds of creosote to be impregnated per cubic foot of wood.

The raw sewage enters this tank through a Y, one end of which is plugged. There are plans for the eventual connection of the plugged

This treated wood septic tank will provide temporary service for a section of Baltimore until, under the long-range sewerage plan, this area gets permanent lines.

end to the proposed pumping station.

At present the effluent from this tank is discharged into the existing storm sewers. Sewer department heads feel that the bacteriological action is thorough enough in the tank so that the addition of this effluent is not objectional. Within five years the department hopes to integrate this development with the city-wide sewerage system. However, if conditions develop to prevent the fulfillment of the plans, the department considers that the present tank will care for the development until connection can be made.

Henry Adler of the Henry Building Company designed and supervised the construction of this plant. George Finck, sewage engineer with the Bureau of Public Works and the Baltimore City Health Department, examined the plans and approved the installation of the unique plant.

Figuring Profits from Plant Machinery

By W. F. SCHAPHORST, M. E.

THIS chart quickly tells you what municipal plant machinery profits are. Most people commonly underestimate the earning value of their equipment. Thus, for example, if you spend $300 for a certain municipal plant machine and if it earns "only" $5 per month, you may have a tendency to ignore this small income. Yet, it represents 20 per cent interest per year on the first cost, and that is admittedly high.

How to Use the Chart

To use the chart, run a straight line through the Earning per Month, column A, and the First Cost, column B. The intersection of the line with column C gives the Interest per Year.

Thus, choosing the example stated above, if the earning per month is $5, and the first cost is $300, the dotted line drawn through the $5, column A, and the $300, column B, intersects the 20 per cent mark in column C. Therefore, the annual interest earned by the $300 is 20 per cent.

Charting Profits

The chart also will be found useful for determining the amount of return per month that should be expected from a given machine or device of known cost. For example, if you know that a machine will cost $300 and you want to make at least 20 per cent, run a straight line through the two known values, $300 and 20 per cent, and the intersection with column A gives the answer at $5 per month.

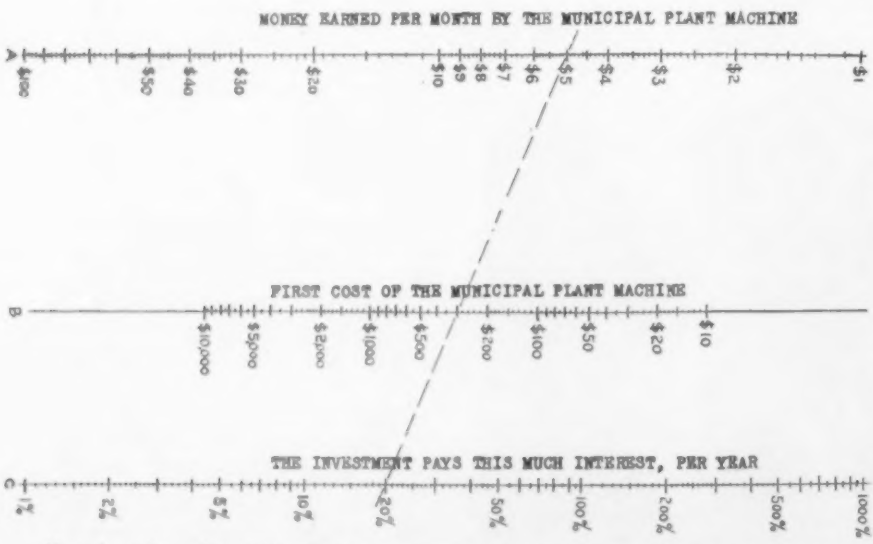
Or the chart may be used for determining the limited amount of money you can spend for a given machine, knowing the income per month that you can get out of it and the interest rate per year that you want the equipment to earn.

In other words, if you know the values in any two columns you can immediately determine the third by running a straight line through the two known points.

The range of the chart, as will be noted, is great enough to take care of most municipal plant machinery problems—the earnings per month ranging all the way from $1 to $100. The first costs, column B, range all the way from $10 to $10,000. And the interest rates vary all the way from 1 per cent to 1,000 per cent, column C.

Range

This chart is also usable for figures larger than those shown on it. For example, if the earning per month is $500 and the first cost $30,000, the same dotted line would be drawn across giving the result as 20 per cent interest per year. In other words, when you add two ciphers to any figure in column A, you must also add two ciphers to any figure in column B. If you add 3 ciphers in A, also add three ciphers in B. Always add as many ciphers in column A as in column B.



Here is a chart that will assist plant operators to determine the earning capacity of their equipment. Directions for using it are outlined fully in the text.

City Manager Plan Gets Foothold in Alabama and Wyoming

Two cities—Mountain Brook, Ala., and Laramie, Wyo.—voted in fall elections to install the city manager form of government, raising to 22 the number of cities adopting the plan this year. Adoption of the plan by these cities also means its operation in the two states for the first time.

The number of city manager communities now stands at 542 in 40 states, and includes one of every five cities of more than 10,000 population in the country, according to the International City Managers' Association.

While seven states do not have laws permitting adoption of city manager government, their legislatures may give specific consent for individual cities. In the other 41 states cities may adopt the plan under constitutional home rule provisions, by provision of an optional charter law or by ordinance under permissive legislation.

Procedure for Utility Rate Increases

OPA Regulations Affecting Both Municipally and Privately Owned Public Utilities

THE following rules for filing notices of proposed rate increases by public utilities, whether municipal or privately owned, are prescribed in Procedural Regulation 11, issued by the Office of Price Administration, under authority of the Emergency Price Control Act, as amended, and Executive Order 9250 and Directive No. 1 of the Director of Economic Stabilization.

§ 1300.901 *Definition.* For the purpose of this Procedural Regulation No. 11, a general increase in the rates or charges of a common carrier or other public utility is defined as any change in its rates, fares, classifications, rules, regulations or practices which results in an increase in the charges for transportation or other public utility service applicable to a class of passengers, shippers or customers, including increases in wholesale or industrial rates or charges for public utility services, as distinguished from an increase of rates or charges applicable to a particular customer on transportation service under special arrangement.

§ 1300.902 *General requirements with respect to notices.* Thirty (30) days before the effective date of a general increase in the rates or charges of any common carrier or other public utility, there shall be filed with the Transportation and Public Utilities Division of the Office of Price Administration, Washington, D. C., two copies of notice of such proposed increase, except as otherwise provided in paragraphs (d) and (e) of § 1300.904. Such notices shall be deemed to have been filed when received in the Office of such Division. If authority for the establishment of any such increase is required by any regulatory agency, notice shall be given on or before the time such authority is sought in order that the Price Administrator may have timely opportunity to intervene, but in no event shall such notice be given less than 30 days before such proposed increased rates or charges are to become effective. All notices shall state the name and address of the Federal, state or municipal authority having jurisdiction over the rates or charges in question.

Each such notice shall contain a statement that the common carrier or other public utility consents to the timely intervention by the Price Administration, on behalf of the Director of Economic Stabilization, before the Federal, state or municipal authority having jurisdiction to consider such increase.

§ 1300.904 *Contents of notice of proposed increase in rates and charges of public utilities.* (a) For the purpose of this section the term public utility shall include the following: Any person, firm, corporation (private or public), engaged in the production, transmission, or sale of electric energy, gas (whether natural, artificial, or mixed) water, or heat; or in the transportation or transmission of electric energy, gas, water, or heat; or in the transmission of messages, communications, or other intelligence by telephone, telegraph, cable, radio, or other wire or wireless conductors or appliances, as a common carrier for hire; or in the transportation as common carrier of passengers by street railway, trolley, bus or motor vehicle in urban areas.

(b) The notice filed by a public utility shall be accompanied by a copy of each application or petition submitted to any regulatory agency in support of the request for such increase in rates or charges.

(c) The following information or data shall be submitted with each notice filed by a public utility, except as provided in paragraphs (d) and (e): *Provided,* That if such information or data is furnished pursuant to the requirements of § 1300.902 above, it need not be furnished in duplicate under this paragraph:

(1) A statement of the reasons for the proposed increase;

(2) A comparison of the existing and proposed rates or charges;

(3) A statement indicating the class or classes of customers affected, and the approximate number of each such class; and the community or communities, or territory affected;

(4) An estimate of the probable sales and revenue under the proposed rates or charges for a period of twelve months after the increase becomes effective;

(5) Detailed income statements for the two calendar years preceding the filing of the application or petition, and an income statement for as much of the current years as is available;

(6) Balance sheets as of the end of the calendar year preceding the filing of the application or petition, and also as of the latest date for which such balance sheets are available;

(7) A statement of federal income taxes paid or accrued during the calendar year 1939 and each calendar year thereafter including the current year;

(8) A statement, if available, showing the origianl cost of the facilities used and useful in furnishing the service for which increased rates or charges are proposed;

(d) Local telephone companies having five hundred or less stations shall not be required to file the information or data specified in subparagraphs (4) to (8), inclusive of paragraph (c) above, excepting the filing of the latest available annual income statement;

(e) Taxi cabs or taxi cab companies shall serve notice upon the nearest state or district office of the Office of Price Administration and shall not be required to furnish information set forth in subparagraphs (4) to (8), inclusive, of paragraph (c), except the filing of the latest available annual income statement.

One copy of each notice must be over the signature of an executive officer, a responsible traffic officer, or a duly authorized attorney or agent of the carrier or other public utility. Duly authorized officers of corporate agents shall sign on behalf of such agents. The person signing the notice shall certify that the information contained therein is true to the best of his knowledge, information and belief.

Henry Ford Looks to Housing and Aviation as Major Post-War Industries

Favors Land-Value Taxation

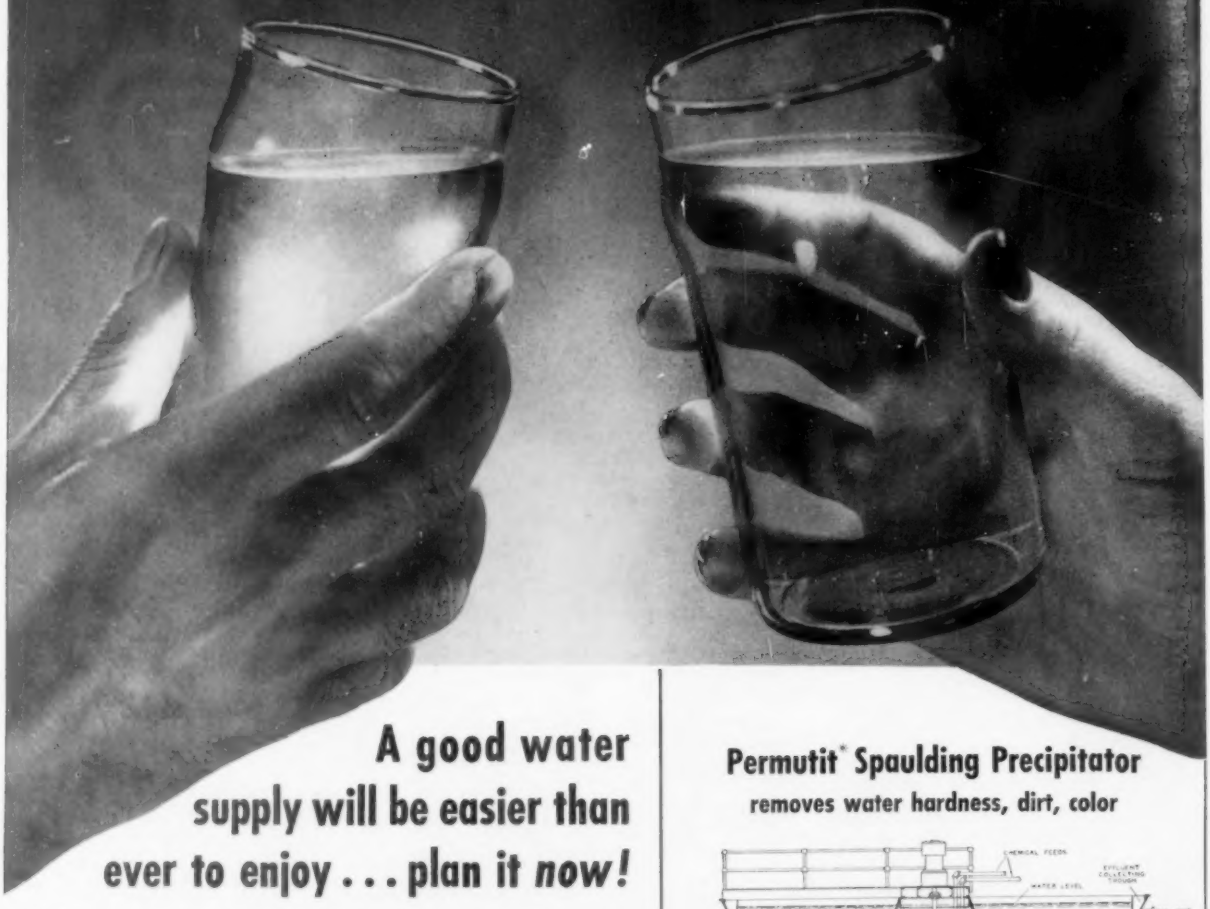
IF WE built new homes at the peak rate for six or seven years, we would still be way behind in the kind of homes that most people nowadays want. Mrs. Ford and I have enjoyed seeing what we could do to fix up the old farmhouse. But most people will want a new kind of home with the last word of economy in construction, care, heating, air conidtioning, comforts and conveniences. Why not? . . . The only way to put such homes within the reach of millions of families is to use new kinds of material and make them, at least in large part, in factories working all the year around. This will mean a big new industry, a lot of work and jobs all over the country.

It only takes a couple of new industries like aviation and housing to make a big difference. There'll be others. . . .

The time will come when not an inch of the soil, not a single crop, not even weeds, will be wasted. Then every American family can have a piece of land. We ought to tax all idle land the Way Henry George said—tax it heavily, so that its owners would have to make it productive.

—Henry Ford, as quoted by Donald Wilhelm in an interview reported in *Liberty* for September 5, 1942.

To a happier future for your city— with soft, sparkling water!



A good water supply will be easier than ever to enjoy . . . plan it *now!*

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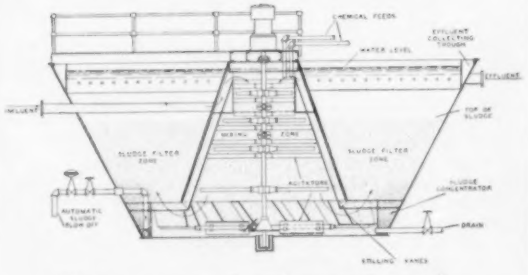

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Local Government Is News — XX

City Hall, Strikes, and Collective Bargaining—Front-Page Stuff

By PHILLIPS BRADLEY

RECENT press releases have put City Hall on the front page of labor news. An actual strike of municipal employees in Newark, N. J., and a potential one in New York City, during the last few months, have revived the question of the right of our public servants to strike. That question is all the more urgent in the light of the action of the War Labor Board in accepting jurisdiction of these two disputes between city governments and groups of their workers. The WLB's action raises another issue of hardly less importance to City Hall—the right of municipal workers to demand that the city for which they work enter into a collective-bargaining agreement with them. Because these questions are of first-rate significance to almost every department at City Hall, it may be of interest to review them from the point of view of experience and practice. Here is front-page stuff of great moment to every city and its employees.

The Background

Quite apart from the debatable jurisdiction of the WLB over the relations of local governments with their employees, various other factors affect City Hall's policies in its own labor disputes. From the Boston Police Strike of 1919 to the present, the issue of the right to strike has been more or less dormant. A few isolated strikes, none of large importance or widespread in character, have created local crises. In recent years, the rapid spread of the labor-union movement, in both numbers and the occupations covered, has made the question of collective bargaining in municipal employment more pressing. Today, both aspects of employer-employee relationships are primary concerns of local government officials, legislative and administrative alike.

It will be convenient to consider these questions separately. They are, of course, closely related in practice, but the problems confronting City Hall are often different. The legal questions involved in collective-bargaining demands by municipal employees are, moreover, tied up with local civil-service standards and practices. If these questions are satisfactorily adjusted, the issue of the right to strike—legal or practical — may never arise. The very existence of the machinery of bargaining may, indeed, avert it altogether. Clearly then, the problem of labor relations in municipal employment can be viewed as one of establishing sound procedures for meeting the grievances (whether actual or merely asserted) of the rank and file.

Collective Bargaining—Duty or Discretion?

The question of whether local governments may—or must—enter into collective-bargaining agreements with their employees is viewed very differently by the employer and the worker. The National Institute of Municipal Law Officers issued an exhaustive report in 1941,* in which the Institute took a decidedly negative view as to the power of local governments to enter into labor-union contracts. The Governor's Committee on State-Employee Relations in New Jersey took the same position in 1942.† On the other hand, numerous unions have demanded that the local governments in departments of which they have become established enter into such agreements. The cases now before the WLB suggest that this asserted right to collective bargaining is—at least implicitly—recognized by that federal agency, in practice if not in law. What are the alternatives here?

It may be admitted at once that the self-organization of municipal employees is generally recognized throughout the United States. These organizations run all the way from professional associations to labor unions affiliated with the AFL or the CIO. The New Jersey Committee calls this right "indisputable . . . for the advancement of common legitimate interests." It goes on, however, to state that "the principle of the closed shop is incompatible with any sound program of labor relations in the government service. . . . Its adoption would therefore be contrary to the public welfare."

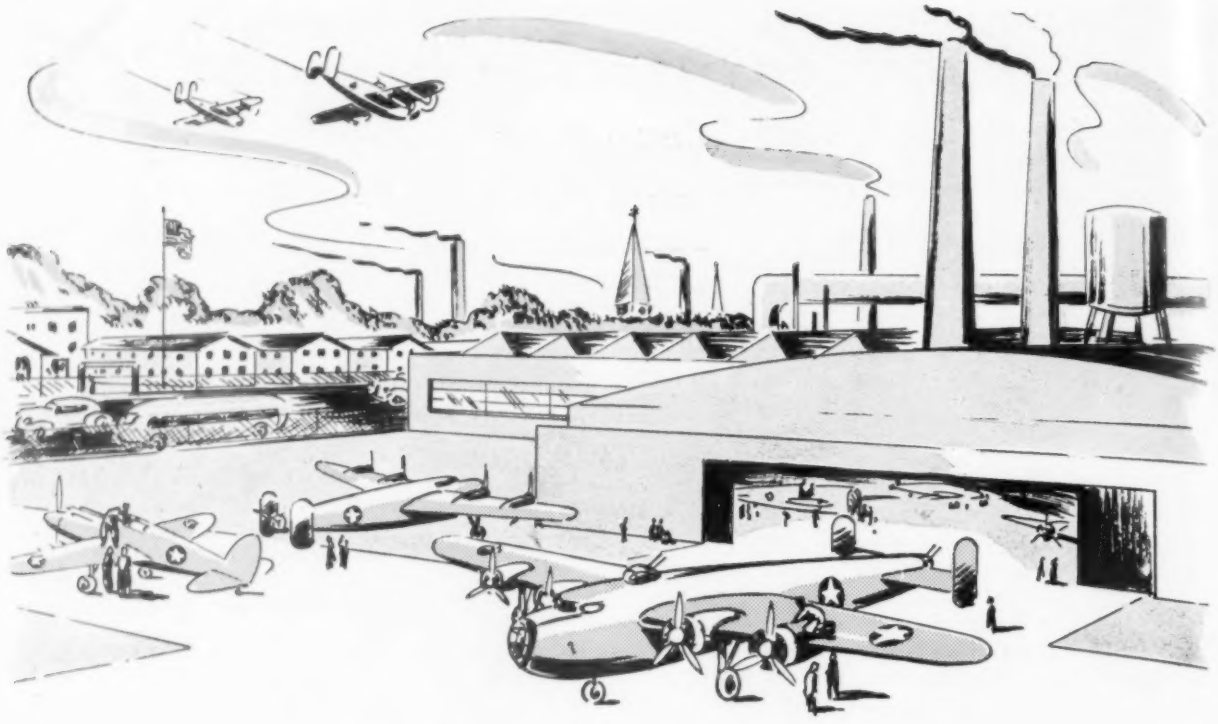
A few cities, notably Philadelphia, Seattle, Reading, Chattanooga, have entered into collective-bargaining agreements with unionized groups of their employees. Many other cities have refused to do so. It should be noted that in every case in which such an agreement has been established between a local government and its employees, it has been based on a specific state law or local ordinance. The Institute, although opposed in principle to such contracts (as indicated by the replies of its members to a questionnaire on the issue), specifically limits their validity to cases in which such statutory authority exists. Current opinion and practice throughout the country are overwhelmingly against entering into such contracts—as a matter of public policy. In no case, it is unanimously agreed by municipal law officers, may a collective-bargaining contract contain a closed-shop clause.

The Closed Shop Issue

The experiments which a few cities have already made with this type of contract, as well as the growing demand of labor unions all over the country for such agreements with City Hall, suggest that the question will not be settled by legal

* "Power of Municipalities to Enter into Labor-Union Contracts," The Institute, 730 Jackson Place, Washington, D. C. (1941).

† *Report* of the Committee, Trenton, N. J. (1942).



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considerations alone. It is likely that the demand will spread to more cities and to new groups of workers as a result of WLB intervention in municipal labor disputes. What answer should City Hall make?

The closed-shop issue is not debatable. Quite apart from policy or public-interest considerations, it is probable that no state or local civil service law would be construed by the courts in a way to validate a closed-shop contract. The very principle of civil service selection of municipal employees on the merit basis precludes other criteria—or agencies — of appointment. No labor contract now in operation in local governments contains such a clause. In many states and cities, civil service laws have been interpreted to prohibit such contracts altogether, even without a closed-shop clause. Wherever recognized, administrative and judicial opinions agree that these contracts must rest on purely voluntary participation in the union by employees in the occupations covered.

This viewpoint will, no doubt, cover a question which may well arise in the future in public employment — maintenance of union membership. Although no municipal labor dispute seems to have occurred in which this demand has been pressed, as unions increase in influence it may well be made. The answer appears to be again—in the negative. If such contracts must rest on voluntary membership in the union with which they are negotiated, then resignation as well as membership must be at the free choice of the individual employee.

An Alternative to Collective Bargaining Contracts

A negative on labor-union contracts at the will of the union does not mean that the question of collective-bargaining procedures should be ignored—by any City Hall. If such contracts may not be legally forced upon a local government, and may not be adopted at all unless specifically provided for by statute or ordinance, an alternative is available to avoid disputes over grievances. As the New Jersey Committee points out, "The obligation of the State to provide for the orderly adjustment of personnel problems is fundamental."

The Committee proposes that a personnel officer, "skilled in handling personnel and public relations," be appointed to each department. Second, it suggests that a personnel committee be set up, composed of an equal number of rank-and-file and supervisory personnel. The former group on the committee should be elected annually and be re-eligible; the latter group should be selected by the department head. Grievances and suggestions should be taken up first with the immediate supervisor, then with the bureau or division head, finally with the personnel officer. Failing adjustment, the question would go to the personnel committee with a right of final appeal to the department head. Third, an appellate body for all departments should be established, preferably in the civil service agency.

It will be seen at once that this procedure is essentially similar to recognized practices in collective-bargaining agreements. Whatever variations local conditions may suggest, here is a way to create the atmosphere — and the actuality — of adjustment open to every City Hall on its own initiative. A plan of this sort involves no expenditure of funds, offers all the guarantees which are inherent in a labor-union contract, provides tangible evidence of City Hall's good faith in labor relations. Many departments and some civil-service laws have already established some such procedures as this. Where not required by law, City Hall would be playing the game of labor relations — both smartly and soundly in these days of increasing labor self-consciousness—by inaugurating such a plan on a city-wide basis.

To Promote Intelligent Study of Local Finances

REFERENDUM
ON SUGGESTIONS FOR A PROGRAM

The Following Suggestions were sent to us by the first group of Vermont citizens, to whom the State Chamber of Commerce Committee on Local Finances and Affairs appealed for suggestions about this question:

"HOW CAN PRESENT METHODS, POLICIES, PROGRAMS OF TOWN, VILLAGE, AND CITY FINANCES BE IMPROVED?"

These suggestions are individual opinions, and are submitted for your comment and criticism.

TAX RATES

"Keep Tax Rates Where They Are-- Do Not Reduce Them."

"I believe almost any town today could reduce its tax rate. However, the actual dollars saved to any one tax payer would not be much relief to him individually. On the contrary by letting every one pay the same amount of dollars in taxes and reducing the town debt, we will be working into a much healthier position."

☐ What I Think_____

TOWN MANAGER

"Trend Toward Adoption of Town Manager System."

"There appears to be a trend toward the adoption of the Town Manager system in our Vermont towns and cities.

"It is my opinion that any Town which has a Grand List of say $10,000. or more, should be under the Manager system under the theory that any business of that proportion deserves the systematic and organized handling which can be obtained only under the Town Manager system.

"I further believe that this proposition is so important and so worthy of the consideration of the citizens of each town that a simple but thorough explanation of the Plan should be prepared and presented to the citizens of each Town, not at present under the system, at their annual March meeting."

☐ What I Think_____

A referendum which aims at improving the financial affairs of municipalities is being conducted by the Vermont State Chamber of Commerce. The first step was to secure, from a group of well-informed citizens, certain suggestions. Then a 6-page referendum form was sent, together with a covering letter, to members of the State Chamber, legislators, chairmen of Board of Selectmen, and to members of local civic and commercial organizations. A portion of the front and two of the questions are reproduced above. It is hoped that this thought-provoking device will result in intelligent discussion and constructive action.

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About . . . Fly Ash

For Municipal Incinerators

By HENRY W. TAYLOR

FLY ash can be classified broadly into three sizes. The first may be called the large or "buzzard" size; the second, the medium or "fly"; and the third, the small or "gnat" size.

These, it should be pointed out in passing, are not the usual classifications of fly ash but they are used here to make the fly-ash size more easily visualized. Engineers concerned with the purely technical analysis of fly-ash prefer to classify its size in microns.

"Buzzard" Fly Ash

The "buzzard" type is inexcusable in plant operation. It consists of rather large pieces of unburned paper or light combustible material that soars like a bird over the plant and then, breaking away from the currents which animated it, falls dismally to the ground. It can be traced to faulty design, faulty operation, inadequate capacity and consequent forcing of furnaces, low temperatures, or a combination of these faults. In the furnace design, the trouble may be traced to the lack of time and turbulence in the flow of gases to the chimney. In any case there is no justifying it. The presence of "buzzard ash" brands a plant as a fundamental failure.

Other Types

The other two types cannot be dismissed so unceremoniously. They may be found in basically well-designed and conscientiously operated plants, and disclose the need for adjustments in operation or minor improvements in design rather than a major overhauling.

Since the ash is suspended in the gas flow, one naturally first considers the possibility of eliminating it by gravity. This could be accomplished by reducing the velocity in the chambers, working like a sedimentation tank in a water-purification plant. However, the reduction of gas flows to such a low speed would require huge sections. Even if these were practical, it would still be difficult to maintain an evenly distributed flow and a uniform velocity.

However, other means are available. Wall contact at deflection points can be used to intercept some of this fly ash. These walls, after a short period of operation, become covered with a slag coating. When the plant is in operation under adequate temperatures, this coating is hot, slightly fluid, and decidedly rough. If the gas impinges against such a wall, the slag tends to enmesh the suspended particles like fly paper. This is apparent since the slag coating constantly increases in thickness. When the cold slag is loosened from the wall, as is required in periodic maintenance work, we note that it consists in a considerable measure of fine dust, some of which has not been fused into the slag mass.

Fly ash may occur whenever solids are burned. The combustion of gas or fuel oil does not create similar nuisances. However, when a conglomerate assortment of materials is burned, such as garbage and refuse, one may expect difficulties. Even in this case, the fly ash may be controlled by proper operation of adequately designed furnaces. Its existence denotes improper design,, operation, or both.

Also, if the gas flow is diverted downward below a suspended baffle and then up again to a port located high in the chamber, the gas will deposit the fly ash in the corners to a limited extent. By installing a curb immediately below this baffle, two pockets are created that will collect large accumulations of fly ash, up to the limitations of their capacity.

Changes in direction and in velocity of the gas will produce centrifugal action and eddies. This action will drop swirls of ash, providing that there is available a capacity for catchment below the main gas flow. Where multiple units are available, a junction of opposing flows, making a common turn to a common port, will often break out the ash. Dry checker walls have often helped to intercept fly ash, but the conditions requiring such expedients should be anticipated in the design in so far as possible.

Time and turbulence cannot be ignored in the design. The element of time must be supplied in any unit no matter how small. Turbulence must be balanced with periods of lesser disturbance in order to produce varying conditions of gas flow. These intermittent changes in flow rate, together with changes in direction of flow, form "stopping-off" places for the fly ash when catchment pockets are available.

Operation Important

Methods of operation can produce fly or gnat ash in any plant. Poor or unintelligent stoking produces it. Forcing of rated capacity can encourage it. Inexperienced charging can produce it. On the other hand, skillful operation cannot always prevent it when the fly ash results from a fundamental deficiency in design and construction.

Every installation should be operated by those responsible for its design and construction for a period of not less than two months, during which time any fly ash tendency can be determined and remedied if it occurs under any condition. No incinerator is a cut-and-dried project when completed; it is subject to test and adjustment. Training of operators is essential, and an opportunity to study operation under working conditions is imperative.

NOTE.—***Next month Mr. Taylor will continue the discussion of fly ash by analyzing a specific installation.***

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Making Salvage Work Permanent

Highland Park, Mich., Develops Something New in Refuse Disposal

THE incinerator of Highland Park makes salvage operations more than a wartime measure. It makes them instead a permanent municipal practice. Completed early in 1941, this plant was designed to reduce both garbage and refuse, leaving a minimum of stable organic residue.

In some respects the conditions that made the construction of this new plant necessary are typical of those found in average cities. Land-fill operations had been the customary method of disposing of both garbage and refuse. However, as the years rolled around officials found it more and more difficult to locate new dumping sites. Finally in 1940 they discovered that the only acceptable location lay some 18 miles from the city. This made hauling and disposal costs unwarrantedly high. Not every city using land-fill operations as a disposal method is faced with these extreme conditions. Many of them, however, know intimately of the search for new grounds and the subsequent possibility of injunctions, law-suits, and objections from land-owners.

Highland Park's plant consists first of a sorting belt designed so that workmen standing at convenient intervals can salvage paper, tin cans, bottles, scrap iron, and rags that are contained in the rubbish. The remaining combustible material goes to a second belt which discharges into an incinerator unit. The resulting residue being dense, free from tin cans, bottles, or similar types of material, makes an excellent material for a landfill in a dumping ground located only four and a half miles away.

Two 25-yard Fruehauf trailers powered by General Motor tractors take care of this residue easily. One driver can easily handle both trucks. He is able to drive a loaded unit to the dump, discharge the load, and return before the second unit has been filled completely.

In balancing the figures covering the operations at the plant, Department of Public Works officials show a total earning of $18,870. Nearly all of this is represented by savings in hauling.

If the plant had not been constructed, the rubbish collection fleet would have had to transport all the rubbish to the dump 18 miles distant, which would have made a total truck mileage for the year of 240,500 miles. The mileage required under the new system was only 73,944. Thus, with trucks operating at an average of 8.9¢ per mile, the department was able to save $14,824 in mileage costs alone.

Furthermore, department officials state that it would have been necessary to purchase two additional trucks in order to haul the refuse to this proposed dumping ground. This would have required wages estimated at $3,827 for two additional drivers. Elimination of this added expense brings the savings total to $18,651.

There have been some additional costs incurred in handling the refuse, J. H. Moorhouse, Superintendent of Refuse, points out. Additional labor was required, maintenance and depreciation of the belts and conveying equipment form a part of the operational cost. Department officials have placed the cost of this additional handling of rubbish, including maintenance and depreciation, at $15,648. To balance this they received as income from the sale of the salvage $15,867, thus showing that the salvage operation paid its way even if the hauling costs were discounted. Income from the salvage is listed as follows:

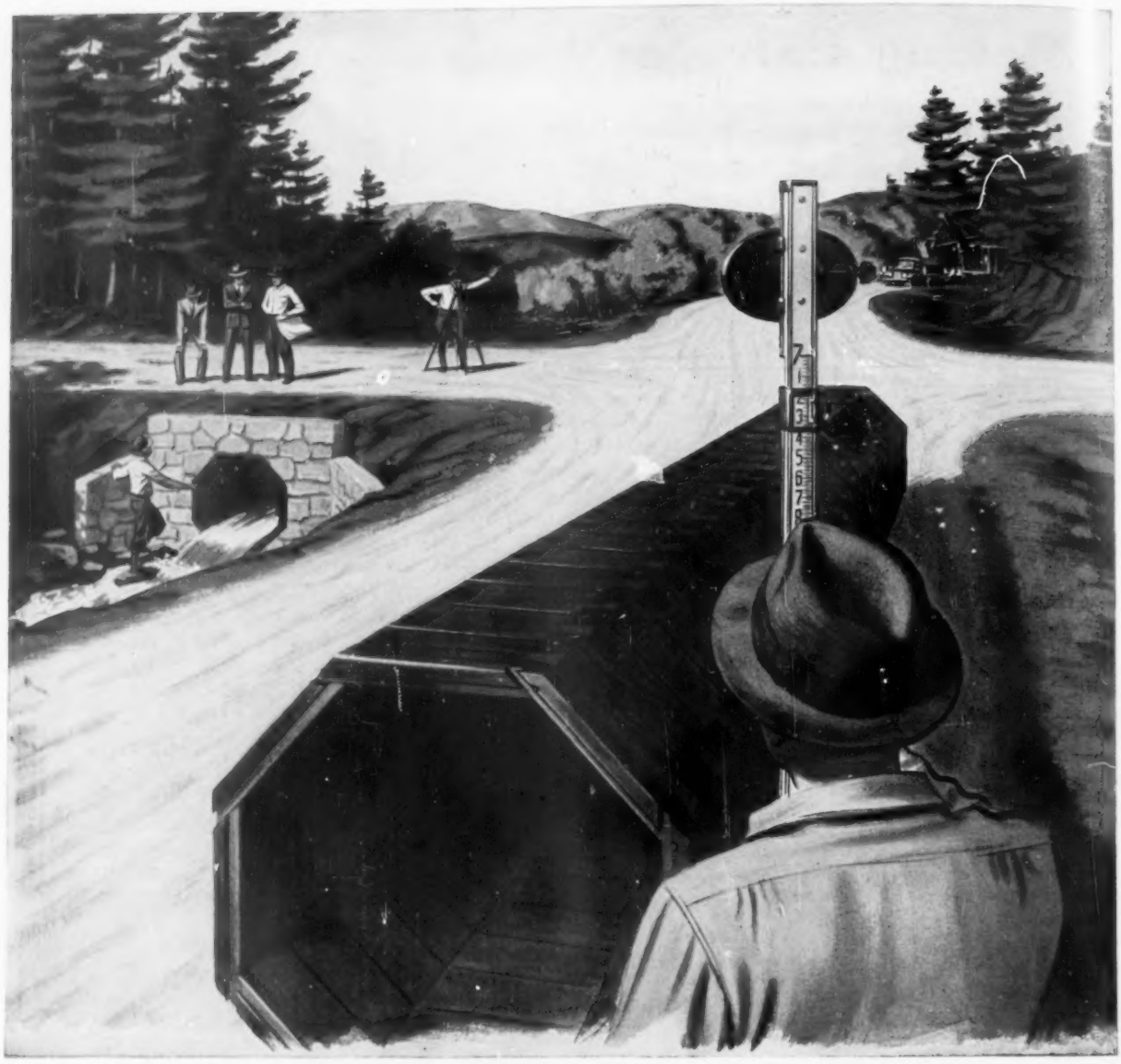
Materials	Amount in Tons (2,000 lb.)	Amount Received
Glass	340.44	$1,762.99
Tin cans (baled)	704.38	7,727.43
Misc. Scrap Iron	244.25	1,824.63
Paper	284.53	3,726.19
Rags	18.96	259.41
	1,592.56	$15,300.65
9,676 milk bottles		56.11
Other misc. junk		510.50
Total Income		$15,867.26

A final balancing of the figures by the Public Works Department shows the following income:

Income from salvage	$15,867.26
Saving in hauling	18,650.70
	$34,517.96
Less additional cost in handling rubbish	15,648.00
Net Income Earning	$18,869.96

Rubbish handled by the plant during the year ending June 30, 1942, totals 60,515 cu. yds.

Four views of the new salvage plant: Top: The dumping platform. Second: A truck-load of refuse is discharged on the platform. Third: Salvageable material being removed from the belt conveyor by sorters. Bottom: Final dense residue discharging into a 25-yd. trailer for disposal.



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Galveston Plan

(Continued from page 39)

cident. If preparations are made carefully, the report states, there is no reason to assume that even a severe break in the line could not be repaired in one day and, since water consumption restrictions can be put into effect readily, the time element can be extended substantially.

In designing and reinforcing the existing mains, the following weaknesses had to be overcome:

Lack of storage on the island either on the influent line or on the distribution system.

Inadequate feeder system to the west end of the city.

Inadequate main capacity to supply consumption of Pelican Spit and Fort Point.

Inadequate fire protection at the airport.

Lack of cross-connections in the distribution gridiron.

Very little loss in carrying capacity of the existing mains has been experienced. The water apparently is of a nature that does not encourage tuberculation.

Strategic location of standpipes will add considerably in overcoming the weakness or storage. To furnish additional pump capacity, the report recommends the construction of a separate station on higher ground not subject to floods. Careful design of pump capacities will allow for flexible operations. Other of the weaknesses may be corrected by standard design.

A 25-year construction program has been prepared which is divided into seven parts: an immediate program, a series of five-year programs, and a final indeterminate program. Basing the construction on present price schedules, the report has itemized a series of details to be developed. The entire program totals more than one million dollars, 52 per cent of which is contained in the immediate program. The remainder is scattered more or less evenly throughout the 25-year period.

By following this carefully prepared plan, Galveston expects not only to bring the water service into shape comparable with that of other municipal services, to serve adequately the vital and growing war industry establishments, but also to provide for expected growths in a post-war era.

Peacetime Planning Proves Wartime Value

CLARKSVILLE, TENN., was one of the best prepared defense areas in the nation—one of the few war centers where planning and preparations were made before the influx of workers and soldiers, and not afterward.

In 1940, a City Planning Commission was formed which, with the assistance of the State Planning Commission, has been making a long-range comprehensive plan for the city based on an over-all survey of its population, housing, topgraphy, traffic, and other features. Fortified by an intimate knowledge of the fundamental needs of the city, the Commission was particularly well equipped to influence immediate decisions for long-term benefits to the city.

When construction began on Camp Campbell, a training center for 40,000 men located just ten miles from Clarksville, the city realized it would be faced with many serious problems. Among several agencies which worked to prepare the city for the emergency, the City Planning Commission was able to play an important role because of the groundwork it had already done.

Although fortunate to have enacted a zoning ordinance before the camp was announced, Clarksville was by no means fully prepared to meet the expected boom in private real estate. The City Planning Commission therefore immediately adopted its proposed subdivision regulations and recommended that health laws be passed to prevent the evils common at trailer camps, bunkhouses, and tent camps in other defense centers.

Another urgent problem was that of augmenting Clarksville's public services to meet the expected additional loads brought by workers and soldiers at the camp. The City Planning Commission made a valuable contribution by studying and recommending a site for defense housing. Plans were drafted for grouping the proposed new health clinic and recreation building for soldiers in a location well fitted for a future civic center. A plan was also prepared for a system of through streets around the downtown business center for by-passing military convoys.

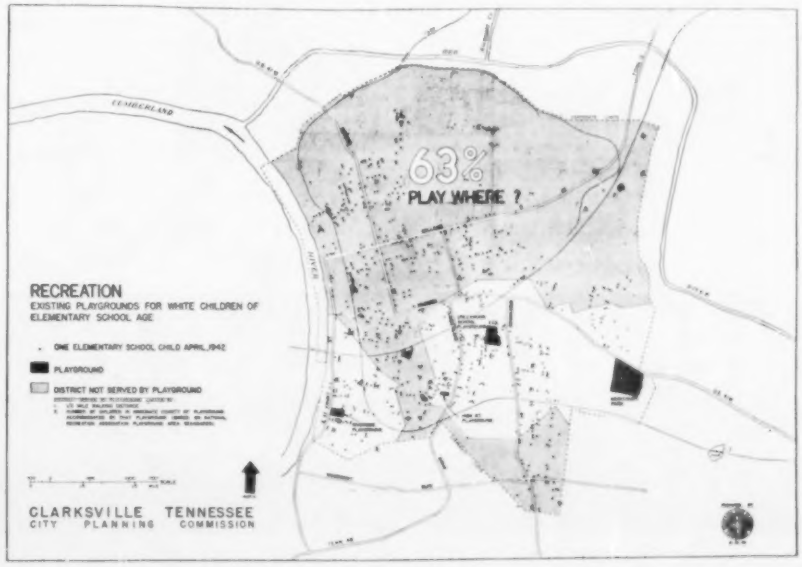
Before construction on Camp Campbell was well under way, all these plans, recommendations, and laws were completed.

Preparation Now for Post-War

Clarksville, like other cities in the country has shortcomings which hinder the welfare and economic progress of its citizens. Studies completed by the City Planning Commission show that one out of every four houses in the city is in dire need of major repairs. Two out of every three dwelling units have no private bath. Actually one-half of the city's area has no sewers. One elementary school has no play space for its 500 pupils. The city owns only about one-fourth as much park area as accepted standards indicate it should have. At the same time no funds are available for purchase. Even during the more prosperous years the city has not collected sufficient tax revenue to meet operating expenses.

The Clarksville Planning Commission feels that now is the time to make the diagnosis and prescribe a course of treatment. The comprehensive plan for the city will soon be completed; then when the armistice comes Clarksville will be ready to take advantage of any financial aid offered for urban rehabilitation.

LLOYD T. KEEFE,
Community Planner, Tennessee State Planning Commission.



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Schenectady Heard the Thuds at Pearl Harbor and Java and Is

Winning the Battle of Transportation

By Fred W. Fisch

Director, Bureau of Traffic and City Planning
Schenectady, New York

WHEN the Japs blasted the Dutch out of the rubber plantations of Java, they were dropping bombs of a different kind in every city in the United States—and automobiles are going off the nation's roads at the rate of three a minute as a result.

This is the "bomb" which the Japs dropped in Main Street and Park Avenue from coast to coast. Every community must organize a "Disposal Squad" to make sure it does not "explode"—that war production is not interrupted because workers cannot get to their jobs on time every day.

"YOU CAN'T DEPEND ON AUTOMOBILES"

Mark that in big red letters and post it on your office wall. Despite the anticipated release of automobile rubber for essential driving, it is safer to assume that you cannot depend on automobiles indefinitely. The government may find it necessary to change this new policy, and therefore it would seem wise to be prepared for such a contingency.

We discussed the impending transportation problem with the general Electric Company, the largest single employer in Schenectady. We sought accurate information on the origin, destination, and mode of transport for all General Electric employees. To obtain these data the company published a map and a simple but complete questionnaire in the employees' newspaper. A survey was made of all cars parked in the parking lots of the company, which served as a double check on the questionnaire and enabled us to count the number of passengers carried by each automobile. Early last spring, the average number of passengers coming from outside the city was 2.1, and from inside the city, 1.5; these averages are now 2.6 and 1.7, respectively.

To keep on top of the job, we found that continual checking and rechecking was necessary. None of the factors remain constant—new employees are coming to work all the time, tires are wearing out, private car passengers are shifting from car to car and from car to public vehicle.

To act quickly it was necessary to use the sampling method—a full-coverage survey requires too much time. We ascertained the transportation habits of all employees by surveying a relatively small portion of the total, testing as we went along until we were fairly certain that our figures were accurate and in sufficient detail.

We also learned that questionnaires cannot be elaborate or complicated—if they are, the issue may become confused and the ultimate purpose defeated.

The Problem Defined

All information gleaned by questionnaires and surveys was tabulated and classified to determine the potential load factor for each bus and trolley line, for each of the transportation companies, both inside and outside the city.

About one-third of the General Electric employees walk to work, one-third use public transportation facilities, and the remaining third ride in private vehicles. To obtain the city-wide picture, the General Electric figures were increased by 40 per cent to allow for the employees working in other industries and to provide for contemplated increases in employment.

Since we were basing our estimates on the possibility of no private automobiles, it was apparent that two-thirds of the workers in the entire Schenectady area ultimately would have to be transported on public vehicles, while the remaining one-third continued to walk to work. This meant that the load on public transit vehicles would eventually be doubled and that the potential peak would require a 100 per cent increase in the number of public vehicles.

Therefore this was our problem:

1. To make one vehicle do the work of two.
2. To conserve private cars for passenger-carrying use so that the transition from private car to public vehicles would be gradual.
3. To preserve the use of private cars for as long a period as possible.

ODT Points the Way

During January, February, and March 1942, few persons outside the government realized how serious a situation was developing. No one but procrastinating purchasers of tires took tire-rationing very seriously, and gasoline rationing hadn't gone any further than the columns of Raymond Clapper and Walter Winchell.

Into the headlines too leaped Joseph B. Eastman, the newly appointed Director of the Office of Defense Transportation. He issued a program for the conservation of vital public and private

Get Full Pipeline Flow . . . and Quick, Surge-Free Closing . . . with

CHAPMAN CONE VALVES

To any water, sewage, air or gas service, this plug-type valve brings many exclusive operating advantages. Its waterway is the full diameter of the pipeline, so there is no obstruction to flow. The plug is fully seated, whether open or closed, and all seats are fully protected. In operation this valve is self-cleaning, so there is no chance of fouling. In the automatic valve, the operating mechanism automatically unwedges, rotates, and rewedges the plug . . . quickly completing a positive, easy closing without surge or wear on seats. And what's more, this unique valve is equally dependable either for frequent or emergency use.

Chapman builds the Cone Valve for manual, hydraulic or electric operation, as required . . . and with the particular type of control best suited to the individual installation.

The **CHAPMAN VALVE** *Mfg. Co.*

INDIAN ORCHARD, MASSACHUSETTS

transportation to be put into operation under the supervision of local war-transportation administrators appointed in all cities with populations greater than 10,000. Mr. Eastman designated the Highway Traffic Advisory Committee to the War Department as the agency to promote nation-wide conservation. In New York the State War Transportation Committee was set up as the cooperating agency and in Schenectady we have been operating under this New York State plan since May 1942.

Fortunately, much of the groundwork had already been completed, and when the line-by-line data were placed before the different public-transit companies it was possible to move ahead rapidly. Because of their excellent cooperation, we worked with them as with one large transportation system, coordinating a plan for the adjustment of schedules, establishment of express runs, skip stops, and related changes with the entire area in mind—not just one transit line.

The application of these measures, together with the re-establishment of rail service in Schenectady (it was in the process of being abandoned), indicated the estimated number of additional vehicles required could be reduced from 100 per cent to 50 per cent. But this reduction was not enough. It was still impossible to obtain any new equipment.

A staggered-hours plan is likely to be necessary sooner or later in every community of any size in the country. *Indeed, the advantages are so great that it will be surprising if the general public will want to go back to the heavy peak traffic, crowding, and inefficient use of transit facilities which existed under the old system.* The need for staggered hours was evident in Schenectady from the very beginning, but the idea had to be sold. The merchants were first to adopt staggered hours. Immediately after Labor Day the local stores opened at 10 A.M. instead of 9 A.M., with beneficial results. Shoppers were encouraged to ride public vehicles after the morning peak, and sales people were kept busing during a larger portion of the working day. Closing hours were changed, resulting in a further spread of the evening peak traffic loads of store employees.

Average Load Materially Reduced

Everyone benefited on September 28 when working hours were staggered for *all* industrial and business firms, and for the schools.

At the General Electric works the morning peak was staggered so that public transit vehicles could make two or three round trips between 7 A.M. and 8:30 A.M.—instead of one trip to carry everyone whose hours began at 7:30 or 8 A.M. The starting time for 24 per cent of the factory workers formerly going to work at 7:30 A.M. was advanced a half hour, and 39 per cent of the 8 A.M. peak, including office workers, now start at 8:30. Thus, the average load per vehicle has been materially reduced. The total number of people carried is the same, or even greater, but they are now carried in two or more "shifts" per vehicle, instead of all trying to crowd into a vehicle at the same time.

The individual has a better chance of getting a seat. More important during the war is the increased capacity which is now available for those workers who will eventually be compelled to transfer from private automobiles to public vehicles. This increase in total capacity is estimated to be from 30 to 50 per cent.

At this writing, staggered hours have been in effect for two weeks. It may be a bit early to draw conclusions but our experience indicates that the total of additional public vehicles required will be held down to only 10 or 15 per cent.

Some of the additional buses required have already been obtained by purchase from other companies where the vehicles were not as urgently required, and by using school and charter buses.

Thus in this vital war-production center, it has been possible to develop a plan to increase the capacity of existing public vehicles about 100 per cent.

Group Riding

This is only the first phase of the battle of transportation in Schenec-

Same hours, different days; at left, before General Electric hours were staggered; at right, after staggering hours; Schenectady, N. Y.

MUNICIPAL BUILDING, SAGINAW, MICHIGAN

☆ The city tax rate of Saginaw is the lowest in this century in Saginaw and nearly half that of ten years ago.

☆ Five years ago the city decided to have an organized insurance program which would reduce hazards and rates while providing comprehensive protection. In the case of fire insurance, this was achieved by scientific application of the coinsurance clause, which we should be glad to discuss with the officials of any city or town. The Home Fleet of Insurance Companies carries all insurance for the city of Saginaw, from band instruments and voting machines to war-damage insurance covering city hall and water-works. Fire apparatus, for instance, is insured against fire, collision, lightning, property damage and bodily injury while on runs outside the city limits.

☆ Our Engineering Department would be glad to consult with you on any phase of municipal insurance.

The Companies in The Home Fleet

THE HOME INSURANCE CO. OF NEW YORK
THE BALTIMORE AMERICAN INSURANCE CO.
THE CAROLINA INSURANCE COMPANY
CITY OF NEW YORK INSURANCE COMPANY
THE FRANKLIN FIRE INSURANCE COMPANY
THE GEORGIA HOME INSURANCE COMPANY
THE GIBRALTAR FIRE & MARINE INSURANCE CO.
THE HOMESTEAD FIRE INSURANCE COMPANY
NATIONAL LIBERTY INSURANCE COMPANY
THE NEW BRUNSWICK FIRE INSURANCE COMPANY
THE PAUL REVERE FIRE INSURANCE COMPANY
THE HOME INDEMNITY COMPANY

ENGINEERING DEPARTMENT

THE HOME FLEET OF INSURANCE COMPANIES

59 MAIDEN LANE NEW YORK CITY

Buy War Bonds and Stamps. Help win the war for FREEDOM.

tady. There remains much to be done.

Group riding must be promoted to lengthen the life of private automobiles and to conserve tires and gasoline. The average capacity of each car is about 5 persons, average occupancy 2.1 persons per car. Vehicles carrying workers from the commuting area have an average occupancy from 2.7 to 3.0, varying with origin points and work-hour shifts. Simple arithmetic shows that these people can be carried with one-half to two-thirds of the cars now being used.

The following ten points summarize our strategy in this fight for adequate continuing local transportation:

1. Define the problem by the sampling method.
2. Use simple but complete questionnaires.
3. Map the origin and destination of all workers.
4. Determine the percentage of passengers using each mode of transport at different hours of the day.
5. *Assume that public vehicles must carry the entire load.*
6. Determine the increased load which will be thrown upon each line of each transportation system in the area served.
7. In effect, pool all common-carrier facilities.
8. By applying the ODT and State Conservation programs — particularly staggered hours—endeavor to accommodate the potential increased load with the minimum of additional vehicles.
9. Institute an aggressive publicity and promotional campaign (a) to emphasize the limited supply of vital transportation; (b) to make motorists think twice before going anywhere, and (c) to increase the number of workers carried in each private car.
10. It is essential to check and recheck continually the conditions affecting transportation.

Getting the Utmost from Transit Vehicles

By E. A. Palmer

**Transportation Sales Dept.
Westinghouse Electric and
Manufacturing Company
East Pittsburgh, Pa.**

THE patronage of public transit facilities in all American cities, with the possible exceptions of New York and Chicago, is currently at an all-time high. This is brought about by the tremendous national program for the production of war equipment and supplies for military, naval, and maritime operations, as well as limitations on automobile driving due to rubber conservation.

On December 1, 1942, national rationing of gasoline for private automobiles went into effect and a new load was thrown upon public transit services.

Transit riding is at its normal maximum during December. Are you finding all electric cars, trolley coaches, and buses loaded to the limit? City authorities and transit organizations should be cooperating in the use of every worth-while device that will help transport the maximum number of passengers safely. Below are the methods which improve the operating efficiency of existing equipment:

Fewer stops permit transit vehicles to operate on a faster schedule.

Maintain ample line voltage—Electric transit vehicles operate at higher speeds when the power voltage is maintained at the rating of the equipment operated. Ample power supply, proper location of power apparatus and feeder lines, as well as the upkeep of the return circuit, are factors in maintaining good line voltage.

Speed-Up schedules by taking all the slack out of timetables on routes where there is less traffic than formerly.

Eliminate unnecessary car mileage to outlying light traffic points by checking line frequently.

Speed up existing equipment where engineering developments and operating conditions make it advantageous to do so.

Improve availability of equipment by maintaining adequate stocks of renewal parts as far as the existing situation makes this possible. This insures prompt and effective repair and minimum loss of time of equipment from service.

Prohibit automobile and truck parking on street transit arteries from 6:30 to 9:30 A. M. and from 4 to 7 P. M. week days, and enforce it.

Street-car loading zones facilitate loading, increase passenger safety, and decrease street congestion.

Eliminate lefthand turns reducing accidents and speeding transit especially during rush hours.

One-Way Streets are obvious safety speed-ups.

Lengthen duration of green traffic lights on transit arteries and shorten the red.

Dispatch transit traffic at important intersections during rush hours with traffic officers.

Use traffic signals of progressive type rightly synchronized with the flow of transit and other traffic as much as practicable. As high as 64 per cent of transit passenger loading is possible while signals are red.

Channelize heavy traffic arteries by painted lines, permitting the greatest traffic capacity of a street to be used and assisting transit vehicles to move faster through the congested district.

Driveways to parking lots, garages, gasoline stations and private buildings on heavy traffic arteries should be located where possible on a secondary street or an alley to avoid any delay to the movement of traffic.

Shoppers should ride during non-rush hours.

Stagger Occupational Hours so that fewer passengers will try to ride vehicles at the same time, and more passengers get seats. The following table shows how passenger loads were evened out in Kansas City, Mo., after staggering occupation hours.

HOW STAGGERING HOURS RELIEVED OVERLOADING

Passengers Entering Downtown By 15-Min. Periods	Old Hours Number	Old Hours % of Average	New Hours Number	New Hours % of Average
7:00 to 7:15	402	11.3	596	16.9
7:15 to 7:30	1,508	42.5	4,490	126.
7:30 to 7:45	614	17.2	5,110	145.
7:45 to 8.00	12,557	350.	2,733	78.
8:00 to 8:15	2,748	77.	4,810	136.
8:15 to 8:30	8,714	245.	4,185	118.
8:30 to 8:45	8,645	243.	4,559	128.
8:45 to 9:00	3,095	87.	4,442	126.
9:00 to 9:15	1,593	44.6	2,137	60.4
9:15 to 9:30	1,448	40.8	2,022	57.3
9:30 to 9:45	838	23.3	6,412	181.
9:45 to 10:00	761	21.5	798	22.5
Total Passengers Entering Downtown for 3-hour Period	42,823		42,294	
Average number each 15 minutes	3,568	100.	3,524	100.

When War Ends

MAKE YOURTOWN A SAFE TOWN AFTER SUNDOWN

WHEN the war is over and the Victory ours, will the streets of Yourtown be safe for Mr. and Mrs. America *and family?* Or will blind spots and blacked out areas present a traffic hazard that will turn them away?

Even before Pearl Harbor, as many as 40,000 men, women, and children annually lost their lives on America's streets and highways —and 60% of these accidents happened at night!

But that's only part of the story.

When battles cease and cars instead of planes and tanks roll from our production lines; when war is done and we turn once again to "business as usual", America's traffic problems will be more acute than ever.

Adequate, expertly designed street lighting can do more than any other one thing to protect your citizens and make Yourtown a safe town after sundown. Your present lighting system should be kept operating at peak efficiency and tomorrow's requirements should be anticipated *today.*

Toward planning now for that brighter future, Union Metal offers you the advice of its trained engineering staff. For even though our production facilities are entirely devoted to the nation's war effort, we feel sure that our 35 years' experience in the design and construction of street lighting standards can be of real value to you today *and tomorrow.*

Keep 'em Burning

The UNION METAL Manufacturing Co. **Canton, Ohio**

Outdoor Lighting
Streets—Highways—Floodlighting

Defensive Lights at Chattanooga Substations

By E. Rodger Dodson

NEW protective lighting installations in Chattanooga have been completed at the Clift Street, Carter Street, Valdeau, College Hill, Ridgedale, and Riverside substations. The principal purpose is to light the fences and area outside the fences, leaving the yards and buildings in comparative darkness.

The lighting units are of several types, due to local conditions, but most of the fixtures are similar to the street-lighting units in the downtown district. The luminaires are mounted on poles located ten feet inside the fence line and are equipped with 500-watt lamps. The light beams from the luminaires are 180 degrees apart and directed along the fence line. A sharp cut-off of light, parallel to the fence line, is obtained just inside the fence by directing the lighting units outward from the pole about 20 degrees from the vertical. Whatever glare is produced by the lighting system is directed away from the operators located inside the station yard.

The installations were made by the line department and underground crews, and the layouts of the installation were prepared by the lighting department.

Our substation protection is designed to meet possible attack either from the air or from the ground. Various methods of protection and safety are employed by different utilities. The type of protective measures taken in Chattanooga was decided on after an investigation of the station and adjacent terrain and property.

Substation operators can help insure their safety by adhering to these rules concerning the lighting installations:

1. Keep out of lighted areas and away from fence lines as much as possible.
2. Do not wear white clothes.
3. Report lamp outages promptly.
4. Notice dark spots caused by lamp outages.
5. Make tour of inspection at irregular intervals and along different routes.
6. Do not look directly at lights and keep lights to the rear whenever possible.
7. Be on the alert when rain, fog, and smoke are present and during blackouts.

Outside the fence around Riverside Substation of the Chattanooga municipal electric system. The substation structures and two men sitting 42 feet inside the fence cannot be seen against this glare barrage.

View of the lighted fence line inside the fence at Riverside Substation, Chattanooga, Tenn. Rodger Dodson and J. H. Pratt, Jr., are 125 feet from the camera.

• • • —

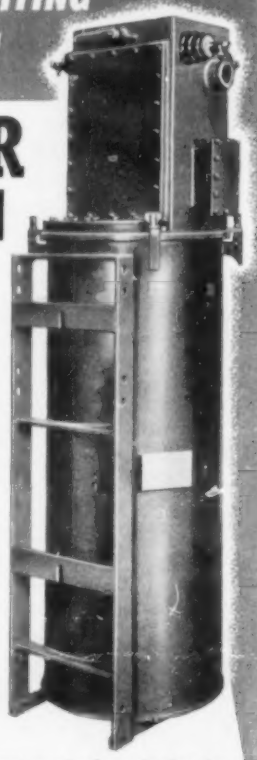
No Substitute for Vision

MR. TABER'S article on "Driving in the Blackout," in your September issue, gives a clear description of the purpose, conditions, and methods of the test at Hebron, Ohio.

I have driven a car under blackout conditions, the car having headlight equipment approved by the Army. My experience has convinced me there is no such thing as safety under these conditions at speeds in excess of a fast walking pace, say 5 miles per hour.

It seems to me highly improbable that we will have air raids frequently or of any duration until such time as our enemies may succeed in establishing air bases on or near our shores. When and if such infrequent short-duration raids occur, all public lighting (street, sign lighting, etc.) should be extinguished and all traffic halted, with lights extinguished. If an accident occurs (fire, burst water main, etc.) during the raid, the proper emergency vehicles should travel to the spot with *full* headlight equipment in operation. Such driving is not likely to give the enemy any information beyond that which he already possesses, while it does give greater assurance that the emergency cars will arrive quickly, and above all safely, at the point where they are needed. Emergency car driving *without* full headlights, with or

WAR-TIME AID
for STREET-LIGHTING SYSTEMS!



WAGNER *Type* Y-H
CONSTANT-CURRENT REGULATOR

In these troubled times, you who are responsible for the maintenance of street-lighting systems must be ever on the alert. In case of blackouts and bombings your distributing system must be under control. Now is the time to prepare for an emergency—equip your street-lighting system with Wagner Type Y-H Constant-Current Regulators. They provide convenient control in entire blackouts, and if a section of the constant-current circuit should be damaged by bombing, the destroyed section can be cut out and the remaining undamaged sections can be quickly put back into service by a single wire connecting the good sections. If the constant-current lighting circuit is properly subdivided by automatic cutouts, the damaged sections automatically disconnect themselves from the rest of the circuit without disturbing the lights in the undamaged parts of the circuit.

In addition, Wagner Type Y-H Constant-Current Regulators Save You Money THREE WAYS

1. **EFFICIENT OPERATION**—The Wagner Y-H regulator operates at high efficiency from fractional to full load . . . has unity or leading power-factor . . . the current drawn from the line is in direct proportion to the load . . . regulator has no moving coils . . . makes instant adjustment to its normal value.

2. **EASY INSTALLATION**—The regulator and all control equipment is mounted into one rugged, compact unit, suitable for pole, platform, or vault installation without reassembly of any parts. The switch and the Y-H unit is self-contained, making it easy to install in shortest time, especially on emergency installations.

3. **MINIMUM MAINTENANCE**—The switching equipment is practically non-arcing since the supply-line contacts never open or close under load. Long life and minimum maintenance are the result. Should a break occur in the loop circuit, the regulator immediately disconnects itself from the supply-line. There are no moving coils—the Y-H regulator can continuously operate with its output circuit shorted without damage resulting from overheating.

BUY U.S. WAR BONDS

T42-8A

Investigate the many advantages of Wagner Y-H Constant-Current Regulators . . . . . Write for complete information.

Wagner Electric Corporation
6400 Plymouth Avenue, Saint Louis, Mo., U.S.A.
TRANSFORMERS · MOTORS · FANS · BRAKES

Are Your Fences in Repair?

ROT
is unsightly and expensive
•
CUPRINOL
Stops Rot!

For fences, benches, sign posts, frame buildings, wharves—wherever wood construction is used—treat them with Cuprinol. 30 years successful use in Europe against Wood Rot and Insect Borers.

Cuprinol is a quick penetrating liquid, used either as a priming coat under paint or by itself, easily applied by brush, spray or dipping. It is economical and gives lasting protection.

There is Cuprinol for Wood; for Fabrics; for Rope; for Nets. Available on priorities of A-10 or over. Write for information and descriptive booklet.

CUPRINOL, Inc., 26 Spring Lane, Boston, Mass.

PROVED SAVINGS in Street Sanitation and Garbage Collection

Modern Heil Street Flushers and Garbage Collection Units save money with bigger loads, faster operation and more efficient performance. Write or wire for complete details today.

THE HEIL CO.
MILWAUKEE, WISCONSIN HILLSIDE, NEW JERSEY

without other traffic moving, is certain to delay arrival and tremendously increase the hazards. Thus we materially handicap ourselves without a compensating handicap on the enemy. The slight delay in transportation of men and materials would hardly create a ripple in our war production program.

Such an analysis shows there is little need to divert essential materials to manufacture 1,000,000 auto lighting kits, the use of which is far more likely to cause more grief than they prevent. A quarter century's study of light and accidents has taught me there is no substitute for vision at any price.

R. E. Simpson,
Consulting Illuminating Engineer
97 So. Main St.,
West Hartford, Conn.

Excerpts from Dimout Regulations for Del., N. J., N. Y.

ALL exterior lights used for illumination of streets or guidance of traffic, except exterior automobile lamps, shall be reduced in wattage and number to the minimum consistent with their purpose, and those retained in use shall be permanently shielded in such a manner that the source of light will not be visible above the horizontal.

All exterior lights used for outdoor manufacturing, in railroad yards, for repair work, shipbuilding, necessary handling or storage of raw or finished materials, or for any type of outdoor construction work, shall be reduced as in paragraph above and shall be permanently shielded in such a manner that the source of light will not be visible at an angle less than 45 degrees below the horizontal.

All exterior lights used for protective purposes, such as illumination of fence lines, exits, sides of buildings or open areas, shall be shielded as in paragraph above, and in no case shall the light as measured on the ground or other horizontal illuminated areas exceed one footcandle at any point.

All exterior lights used for illumination of open areas, parking lots, gasoline filling stations, playgrounds, places of amusement or entertainment, sidewalk cafes, marquees, open air gardens, terraces, for holiday decorations . . . shall be permanently shielded [and] in no case one footcandle at any point. In no case shall the total wattage used exceed the following limits: for incandescent bulbs—1/8th watt per square foot of lighted area; for fluorescent tubes—1/16th watt per square foot of lighted area.

Planning Light for Plant Protection

PROTECTIVE lighting is the war's adaptation of floodlighting which many municipalities used to practice on sports fields and public buildings. Numerous luminaires have been developed to light up the various locations which saboteurs might exploit. The accompanying chart shows economical applications for eight types of protective-lighting luminaires, illustrated in the booklet "Lighting for Industrial Plant Protection," issued free by the General Electric Co., Schenectady, N. Y.

The first three luminaires at the top of the chart are variations of the basic modern street-lighting luminaire. All three have weatherproof hoods and reflectors, the third and fourth also having Holophane refractors for placing the light economically where it is wanted. The fifth unit has a reflector back of the lamp, which redirects the light through a Fresnel lens to form the proper horizontal or vertical light pattern. The floodlights are for wholesale area lighting. The searchlight is mounted on the roof and used for spot investigation.

The street-lighting luminaires equipped with reflectors are used for lighting fence boundaries. If it is desired to light a considerable area on both sides of the fence, the first luminaire shown on the chart is used. If the area outside the fence need not be lighted, the second luminaire shown is most efficient.

For the many practical factors governing the choice of series and multiple circuits, correct luminaires, and their effective location, consult this booklet.

PRINCIPAL APPLICATIONS OF VARIOUS TYPES OF LUMINAIRES

	Form 79S	Form 79D	Form 79R	Form 79VR	Form 104	Closed Flood-lights	Open Flood-lights	S-5 Search-lights
Fenced Boundaries	❶	❶	●	●	●			●
Buildings Forming Plant Boundaries		●	●					
Authorized Entrances	●					●	●	
Water Fronts			●	●	●	●	●	●
Vulnerable Apparatus (Fenced)			●	●	●			
Vulnerable Apparatus (Unfenced)						●	●	
Areas between Buildings (Narrow)		●						
Areas between Buildings (Wide)		●				●	●	
Large Plant Areas	❷					❷	❷	
Loading Platform	●					●	●	
Employee Parking Areas	●	❸				●	●	
Building Construction						●	●	
Emergency Lighting								●
Internal Roadways	●	●	●	●				

❶ Recommended only when light is required inside the fence line

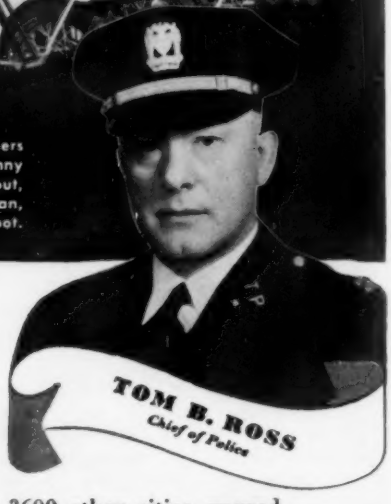
❷ Install ring of floodlights or luminaires on Union Metal pole similar to Cat. No. 462Y13

❸ Install Form 79D with deflector on the side toward the fence.

WITH TACOMA, WASH., IT'S HARLEY-DAVIDSONS *Exclusively* SINCE 1936!

EINAR LANGSETH
Commissioner of Public Safety

Motorcycle officers above (left to right) Kenny Hagedorn, Pete Schultz, Hank Oathout, Carl Meyers, Ross Mace, Jess Eastman, Skid Thordsen and Sgt. Glen Talbot.



TOM B. ROSS
Chief of Police

TACOMA'S Commissioner of Public Safety, Einar Langseth, and Chief of Police, Tom Ross, can well be proud of their famous "white fleet" and its efficient motorcyle officers. A total of eleven dependable Harley-Davidsons includes two Servi-Cars for checking overtime parking, serving parking meters, and assisting the paint truck in marking traffic and pedestrian lanes and safety zones . . . In Tacoma and more than 3600 other cities, rugged, dependable Harley-Davidson Motorcycles are stepping up the efficiency of police departments — meeting ever-increasing problems of traffic control and protection of vital war industries.

HARLEY-DAVIDSON MOTOR CO., Milwaukee, Wisconsin

Buy War Bonds and Stamps. Help win the war for FREEDOM.

Prepared by
FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of "The Master Plan"

Residential District—Filling Station—Esthetic Purpose—Taxable Values

ILLINOIS.—*Neef* v. *City of Springfield*, Sup. Ct., September 21, 1942, reported in 580 Ill. 275.

John E. and Frances Neef are the owners of two vacant lots on Monument Avenue in the City of Springfield. For many years the beautification of Monument Avenue has occupied a prominent part in Springfield's city planning. The two lots are in a neighborhood predominently residential and are in a residential zoning district. The Neefs are seeking to erect a filling station on their property and have filed this suit to enjoin the city from enforcing the zoning ordinance as to them.

The value of this property for commercial use is $3,500, and as residential property, $1,200. The city offered evidence tending to show that the erection of the filling station would depreciate other property in the neighborhood to a greater extent than it would raise the value of the Neef property.

The city testified that the filling station would constitute a traffic hazard and, besides, was unsuited to the neighborhood, but admitted that their chief concern was the preservation of the beauty of the street and carrying out the general plan for preserving the Lincoln shrines in the city.

The sole question involved in this case is whether or not the regulation of the use of the Neef property, under the zoning ordinance, is a valid exercise of the police power.

It is no objection to a zoning ordinance that it tends to promote an esthetic purpose if it can be sustained on other grounds of public health, safety, morals, or general welfare.

As the value of neighboring property would be decreased by allowing this commercial use here, more than that of the Neefs would be increased, there would thereby be a loss to the city of taxable values; and the prevention of such loss is one of the purposes for which the zoning power is granted, and is directly related to the public welfare. On this ground alone the ordinance should be sustained.

The burden of proving the unreasonableness of the classification in this case is on the Neefs, and is not shifted by reason of the fact that the zoning board recommended a change.

The problem of whether this property is to be characterized by the residential area adjoining it on the west and south or by the commercial area adjoining it on the east is certainly debatable, and one to be answered by the City Council and not by the court.

The Neefs have failed to show that the zoning ordinance is unreasonable as applied to their property and must fail in this action to obtain the right to erect the filling station on their property.

EDITOR'S NOTE.—The statement of the court, that the promotion of an esthetic purpose is no objection to a provision of law under attack, is certainly an understatement. It is held in a number of cases that the promotion of such a purpose may be of aid as ancillary to other purposes; and while there have been no judicial explanations of the meaning of this statement, it would seem evident that the judges making it regarded such a tendency as positive to such a provision. Other cases go much further; see in this connection the article entitled "The Eye Gets Legal Protection" by Albert S. Bard in the November issue of this magazine.

The statement of the court that the preservation of taxable values is a valid purpose for the exercise of the police power is welcome in these times, or at any time; for the cases so holding are few in number.

Zoning—Set Back

IOWA.—*Boardman* v. *Davis*, Sup. Ct., May 12, 1942, reported in 3 N. W. (2d) 608.

The ordinance of the city of Marshalltown provides in certain districts that where two or more lots in any block are occupied by buildings which existed at the time of the passage of the ordinance, the average of the setback distances from the street shall be the distance of the setback required for houses thereafter erected, in no case to exceed 50 feet.

The validity of zoning setbacks has not been passed upon heretofore in this state, but has been upheld in other states. The court sustains them in Iowa, considers the ordinance in question, as applied to defendant, reasonable and holds that he has violated it.

Residential District—Church—Legislative Body in Administrative Capacity

OHIO.—*State ex rel. Synod of Ohio of United Lutheran Church in America* v. *Joseph*, Sup. Ct., January 28, 1942, reported in 39 N. E. (2d) 515.

In this action the church synod is seeking to obtain a permit to build a church in a one-family residential zoning district. The ordinance provides that churches and certain other buildings may be erected in the district only by permit issued by the Zoning Commission and the Village Council. These bodies jointly refused to issue the permit, without giving a reason; but had previously passed a resolution that permits for churches in such a district should be refused so long as business property is available.

The church challenges the constitutionality of the provision of the ordinance by which the Village Council gave itself the power to issue such permits jointly with the Zoning Commission, without prescribing any standards or guides to govern the exercise of this power; but, whatever doubts there may be on this point, the church cannot in this action challenge this provision and at the same time invoke it as the basis for the issuance of a permit to it.

The question remains whether the action of the Village Council has been so arbitrary, and bears so unsubstantial a relation to the legitimate objectives of zoning, as to be unconstitutional; i. e., whether the Council has the right to refuse such a permit in the residential district for the reason that business locations are available.

The Council has interpreted the ordinance as in effect excluding churches from single-family residence districts except in so far as the prohibition is lifted by the issuance of a special permit. A flat prohibition of churches in such districts might well be unconstitutional. This question does not arise, however, as the ordinance should be interpreted as allowing churches in such districts and requiring a special permit for them.

The Council in these matters is acting not in a legislative but an administrative capacity. The fact that it enacted the ordinance and has the power to amend it does not render these provisions invalid or ineffective. The commissioners cannot suddenly transform themselves from administrators to legislators in order to be released from the restrictions that are imposed upon administrative officers.

And the refusal to allow a church in the residential district with a seating capacity of 250 persons and no chimes or bells cannot be justified on the basis of public health, morals, or convenience.

Appeals Board—Variance

WISCONSIN.—*Thalhofer* v. *Patri*, Sup. Ct., May 5, 1942, reported in 3 N. W. (2d) 761.

The owner of a single-family house is seeking to convert it into a 3-family apartment, which the zoning ordinance permits in this district. The area provisions of the ordinance stipulate that every part of a required yard shall be open from its lowest point, unobstructed, to the sky. The rules of the Industrial Commission require an exit, for a 3-family building, from the kitchen to the side yard. In putting in this exit the area requirements were slightly violated. The board of appeals granted the permit.

And the court holds that this is not the exercise of an unlawful delegation of legislative power, but a permissible waiver of exact compliance with the details of the ordinance.

EDITOR'S NOTE. The court was evidently following an ancient legal maxim, "de minimis non curat lex."

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Municipal Law Notes and Decisions

Prepared by National Institute of Municipal Law Officers, Washington, D. C.
Charles S. Rhyne, Executive Director

Annexation—Reasonableness of—Nature of Land Annexed

Extension of a city's limits is invalid where the extension was unreasonable because the land in question was used chiefly for agricultural purposes or was vacant and not adapted for city uses. *Jones* v. *City of Furguson*, 164 So. (2d) 112 (Mo. App. July 7, 1942. Reh. Den. Sept. 11, 1942).

Auditorium—City-Owned—Fall by Spectator at Motion Picture Showing

City was liable when plaintiff fell while descending steps inside city auditorium when a motion picture was being shown by municipality as there was no warning of the stairs and the room was too dark to see them. *Sanders* v. *City of Long Beach*, 129 Pac. (2d) 511 (Cal. App. Oct. 1, 1942).

Billboards—Ordinance Prohibiting

An ordinance prohibiting the exhibition of billboards, by persons not engaged in advertising business, on any property except property where advertising business is carried on is invalid as an improper exercise of "police power." *O'Mealia Outdoor Advertising Co.* v. *Mayor and Council of Borough of Rutherford*, 27 Atl. (2d) 863 (N. J. Sup. Ct. Aug. 19, 1942).

Buses—City Owned—Injury Caused by Sudden Stop

Passenger recovered damages sustained when bus, which was going in excess of speed limit in a business district, stopped short and caused her to lose her grip and fall, as bus driver was negligent and the passenger had used ordinary care for her safety. *Longfellow* v. *City of Detroit*, 5 N. W. (2d) 457 (Mich. Sept. 8, 1942).

C. C. C.—Injury to Worker on City Playground

A city is not liable to a Civilian Conservation Corps member who sustained injuries while engaged in city work on the construction of a public playground as such work by the city is a "governmental function." *Lemieux* v. *City of St. Albans*, 28 Atl. (2d) 373 (Vt. Oct. 6, 1942).

Cemetery—Cannot Sell for Unpaid Special Improvement Assessments

City could not sell property of non-profit cemetery company for unpaid special improvement assessments as the upkeep and maintenance of a cemetery are necessary to "public policy." *Forest Hill Cemetery Co.* v. *City of Ann Arbor*, 5 N. W. (2d) 564 (Mich. Sept. 8, 1942).

Civil Service—All Rights Lost by Resignation—Reappointment Not Retroactive

Plaintiff who had resigned from a civil service position and had been reinstated after a year to a position of clerk, which position was later abolished by the City of New Rochelle, could not claim seniority over another employee appointed after plaintiff's original appointment, because his resignation was a complete break in the continuity of his civil service and all seniority rights were lost thereby. *Doering* v. *Hinrichs*, 43 N. E. (2d) 709 (N. Y. Ct. App. July 29, 1942).

Competitive Bids—Discretion in Refusing Lowest Offer

Where facts did not prove that city had abused discretion in refusing bid of defendant, the city was not compelled to enter into contract with defendants. *S. J. Groves & Sons Co.* v. *Oklahoma City*, 129 Pac. (2d) 185 (Okla. Sept. 22, 1942).

Condemnation—Tax Title of County Where No Redemption Before Taking

The county was entitled to entire condemnation award where land had been acquired by it at a tax sale and the original owners had not attempted to redeem the land before the Federal Government condemned it for military purposes. *United States* v. *Certain Lands in Town of Hempstead, Nassau County, N. Y.*, 129 Fed. (2d) 918 (U. S. C. C. A. 2nd July 21, 1942).

Firemen—Wrongful Discharge for Political Activity

Firemen were wrongly discharged for political activity when charges were not made in writing and their only political activity was formation of a fire fighters' Union. *Reed* v. *Board of Police and Fire Commissioners of City of Peoria*, 43 N. E. (2d) 849 (Ill. App. Sept. 3, 1942).

Grade Separations—Loss of Access, Light and Air Due to

Where the construction of a railroad overcrossing deprived property of access, light, and air, damages for loss of such property value were collectible from city. *Gilliam* v. *City of Centralia*, 128 Pac. (2d) 661 (Wash. Aug. 21, 1942).

Nuisances—Operation and Color of Sweeper as Cause of Injury to Motorist

City street sweeper, dark in appearance, with only one light on a foggy night, and operating on the wrong side of the street, constituted a nuisance thereby making city liable for injuries sustained by a motorist who ran into the street sweeper. *Warren* v. *City of Bridgeport*, 28 Atl. (2d) 1 (Conn. July 28, 1942).

Parking Meters—Purchase Contract—Competitive Bidding

A city is not required to let a contract for the purchase of parking meters to the lowest responsible bidder where all meters are not equally satisfactory from a use standpoint. In such cases a well-recognized exception allows the purchase without competitive bidding of the meter best adapted to the city's needs. *Hodgeman v. City of San Diego*, 128 Pac. (2d) 412 (Cal. App. July 27, 1942).

Parks—Private Bleachers on City-Owned Land—Collapse Injuring Spectator

City was not liable for injuries sustained by the collapse of bleachers at a Rose Festival given by a private corporation in a city park even though the bleachers had been inspected by a city official as the city was treated as a "lessor" in this case. *City of Tyler* v. *Ingram*, 164 S. W. (2d) 516 (Tex. July 22, 1942. Reh. Den. Oct. 7, 1942).

Public Utilities—Liable to City When Broke Water Main

Telegraph company was liable to city for costs incurred when water main broke in the course of construction work by the company, even though the company was not negligent as the company had agreed in a bond to pay all such costs to the city. *E. W. Edwards & Son* v. *City of Buffalo*, 37 N. Y. Supp. 249 (N. Y. Sup. Ct. App. Div. Sept. 23, 1942).

Sewerage—Damages from Pollution of River by

City is liable for damages to property owner whose land had been damaged by the pollution of a river by sewage dumped into the river by the city. *Conlon* v. *City of Dickinson*, 5 N. W. (2d) 411 (N. D. Aug. 14, 1942).

Sidewalks—Injury Due to Defective Water Meter Box

A city is liable to a woman who was injured as she stepped on a defective water meter box alongside a sidewalk. *Harms* v. *City of Beatrice*, 5 N. W. (2d) 287 (Neb. Aug. 14, 1942).

Smoke—Validity of Ordinance Regulating

The City of St. Louis ordinance to control emission of smoke is a valid exercise of the city's police powers. *Ballentine* v. *Nester*, 164 S. W. (2d) 378 (Mo. Aug. 6, 1942. Reh. Den. Sept. 8, 1942).

Streets—Pedestrian Crossing Street to Avoid Water in When Hit by Automobile

A city is not liable where pedestrian deviated from left side of the street to avoid a pool of water and was hit by a speeding motorist who would have hit him even though he had not had to move and the pool was not the proximate cause of the accident. *Shevetz* v. *City of Campbell*, 44 N. E. (2d) 141 (Ohio App. Mahoning Co. Dec. 15, 1940. Just released for publication).

Street Railroads—Motorist Injured by Striking Rails

City of Cincinnati and street car company were not liable when motorist struck street car tracks and turned over as the plaintiff was guilty of contributory negligence. *Karle* v. *Cincinnati St. Ry. Co., and the City of Cincinnati*, 43 N. E. (2d) 762 (Ohio App. Hamilton Co., May 4, 1942).

Taxes—Tangible and Intangible Property

City had no right to tax delivery trucks, furniture and fixtures of a bakery company as this property was "capital" and not tangible property. *City of Roanoke* v. *James W. Michnel's Bakery Corporation*, 21 S. E. (2d) 788 (Va., Sept. 9, 1942).

Water System—Damages from Erosion Caused by

City of Oakland held liable for damages to property caused by erosion due to negligent construction and maintenance of the city's water system. *Grove* v. *Lakeshore Homes Assn and City of Oakland*, 128 Pac. (2d) 716 (Cal. App. Aug. 26, 1942).

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A broad over-all study of the whole national transportation problem in its relation to the economic and social development of the country, prepared by a small staff of transportation specialists. Treating only incidentally the immediate problem of war transportation, it outlines a long-range transport development policy which would completely overhaul and rebuild the transportation facilities of the nation, permitting each mode of transport its economic functioning as an integral part of the whole system and aiming toward the best possible standards of service at the lowest cost. A picture of American transportation and transport policy, and particularly of recent technological developments in transportation, is presented in Part I; a series of surveys of the transportation industries or of particular transportation activities constitutes Part II. See also p. 83 of this issue of THE AMERICAN CITY.

The Future of Transportation.—Building America Series, National Resources Planning Board, Sept., 1942. 43 *pp.*

A digest of the above publication.

Street Construction

Emergency Design of Concrete Pavements and Bases.—By H. F. Clemmer, Engineer of Materials, Washington, D. C. American Public Works Association, 1313 *E. 60th St., Chicago, Ill.* 1942. 11 *pp.* 25¢.

A discussion of the problems in municipal pavement design and construction arising from the elimination of, or the curtailment in, the use of steel, and of necessary revisions in curing methods in the construction of concrete pavements and bases.

Construction

Steel and Timber Structures.—Compiled by a Staff of Specialists. Editors-in-Chief, George A. Hool, S.B., formerly Professor of Structural Engineering, and W. S. Kinne, S.B., Professor of Structural Engineering, University of Wisconsin. Revised by R. R. Zipprodt, B.S., Principal Civil Engineer, Office of the Quartermaster General, Washington, D. C., and D. M. Griffith, Professor and Chairman of Department of Civil Engineering, Bucknell University. McGraw-Hill Book Co., New York. Revised Edition, 1942. *xvi* + 733 *pp.* $6.00 *from* THE AMERICAN CITY.

One of a series of volumes designed to provide the engineer and the student with a reference work covering thoroughly the design and construction of the principal kinds and types of modern civil engineering structures. This one has sections covering buildings, roof trusses, short span steel bridges, timber bridges and trestles, steel tanks, and chimneys. Other sections take up structural steel detailing, fabrication of structural steel erection, estimating steelwork, and materials.

Recreation Conference

Proceedings of the War Recreation Congress, Cincinnati, Ohio, Sept. 28 to Oct. 2, 1942.—National Recreation Association, 315 *Fourth Ave., New York.* 1942. 250 *pp.*

Speeches and discussion at the 27th national recreation congress attended by over 900 delegates. Subjects receiving special attention were services to the armed forces, recreation for industrial workers, special needs of women and girls, problems of Negroes, losses in recreation personnel, adapting programs to meet war needs.

Water Purification

Effect of Sodium Hexametaphosphate on the Solution of Lead.—By Edward W. Moore and Fred E. Smith. Reprinted from Journal of the American Water Works Association, Sept. 1942. *Graduate School of Engineering, Harvard University, Cambridge, Mass.* 9 *pp.*

Results of an experiment on the effect of sodium hexametaphosphate on lead, made for the purpose of testing the desirability of introducing this chemical into water systems containing lead pipe.

Fire Department Administration

Municipal Fire Administration.—Published for the Institute for Training in Municipal Administration by the International City Managers' Association, 1313 *E. 60th St., Chicago, Ill. Revised Edition,* 1942. *x* + 666 *pp., offset.* $7.50.

Prepared as a text for an in-service training course for fire department command officers and chief administrators of cities, this volume reviews present-day procedures in fire department administration and possible solutions to administrative problems which experience has proved feasible. It discusses the relationship of the underwriters' requirements to fire protection facilities and the relation of the fire department to other departments and to the city government as a whole. Among other topics to which individual chapters are devoted are: organization for fire protection, personnel management, department buildings and equipment, signaling systems, legal aspects of fire prevention, records and measurement of results.

Round Tables on Fiscal Problems

State and Local Wartime Fiscal Problems: Regional Reports.—Nov., 1942, *issue of "Tax Policy," published by the Tax Institute, Wharton School of Finance and Commerce, University of Pennsylvania,* 135 *S. 36th St., Philadelphia, Pa.* 19 *pp., mimeo.* 25¢.

Report of discussion meetings on wartime state and local financial problems, held under the auspices of the Tax Institute in key cities in five regions in the country selected for geographical diversity and different types of war impact. Preliminary to the national symposium on the same topic held in New York the latter part of November, the meetings were attended by selected officials and representatives of civic clubs.

Tax Collection Statistics

Tax Yields: 1941.—*Tax Institute, University of Pennsylvania, Philadelphia, Pa.* 1942. *xi* + 171 *pp.* $2.50.

Last year's edition of Tax Yields presented data for the depression period during the thirties. New data in this annual include tax collection statistics for 1941, with preliminary tax data for 1942, for the federal and state governments, and a sampling of the large cities. Of particular interest to city officials is the chapter "Effect of War on City Revenues," in which forecasts of war trends in city collections are made by various city officials and authorities.

Regional Planning

Regional Resource Development.—By Alvin Hansen and Harvey S. Perloff, National Planning Association, 800 *21st St., N. W., Washington, D. C.* 1942. 40 *pp.* 25¢.

A comprehensive program for regional development of the United States, with a brief, to-the-point analysis of the case for resources development on a regional basis—its problems, potentialities, and essential elements. Examples of such development are described.

City Planning Principles

Can Our Cities Survive?—By José Luis Sert. The Harvard University Press, Cambridge, Mass. 1942. *xi* + 259 *pp.* $5.00 *from* THE AMERICAN CITY.

An "ABC" of city planning, presenting a composite picture of the physical city of today in Europe and America, and of the historic city out of which it grew; an analysis of the diseases that beset the modern city as a place in which humans must work, play, and live; and a general discussion of possible remedies through sound and progressive city planning. The city is analyzed according to its four main functions—dwelling, recreation, work, and transportation. The book is based on the "Town Planning Chart," a set of city planning principles formulated after the study of 33 different cities in this country and Europe, by an association of 18 eminent town planners and architects from as many different countries, known as the International Congresses for Modern Architecture. Written for the layman as well as the specialist, the book attempts to arouse the average city dweller to the handicaps of the city so that he will want to see them changed. A dramatic book in both text and illustrations, with streamlined photographs, maps, and charts on almost every page.

Tax Delinquency

Tax-Reverted Properties in Urban Areas.—By A. M. Hillhouse, Associate Professor of Public Administration, University of Cincinnati, and Carl H. Chatters, Executive Director, Municipal Finance Officers Association. Public Administration Service, 1313 *E. 60th St., Chicago, Ill.* 1942. *viii* + 183 *pp.* $2.50.

A thorough discussion of the administrative and policy-making problems faced by municipalities in dealing with their tax-reverted properties, with an account of the experience of cities which have arrived at various solutions to these problems. The book analyzes the various factors involved in acquiring title to and properly using tax-reverted properties, or of disposing of them; discusses such aspects of the problem as the reduction of the cost of acquiring title, claims of overlapping jurisdictions, establishment of city real estate offices and their organization and the large problem of preventing delinquency and blight.

Tax-Reverted Land

Tax Sales in Maryland.—By Carl N. Everstine. Research Division, Legislative Council of Maryland, City Hall, Baltimore, Md. 1942. 21 *pp., mimeo.*

Report of a study of laws relating to tax sales in Baltimore and in other states than Maryland, with recommendations for uniform legislation for Maryland, in this field.

Accounting

Fundamentals of Accounting—with Questions, Problems and Practice Sets.—By Perry Mason, Ph.D., C.P.A., Associate Professor of Accounting, University of California. The Foundation Press, Inc., Chicago, Ill. xv + 494 *pp.; Questions and Problems,* 241 *pp.* $4.25 *from* THE AMERICAN CITY.

A textbook for the first year of accounting instruction at the college level, containing material which has been thoroughly tested in the classroom by several instructors. It discusses basic principles and procedures of accounting; takes up the problems of social security, income, and sales tax accounting; explains machine accounting, with illustrations; considers business organization and methods. Unusual in such a text is the chapter, "Accounting in the Social Order," which relates accounting to the fields of economics, law, and government.

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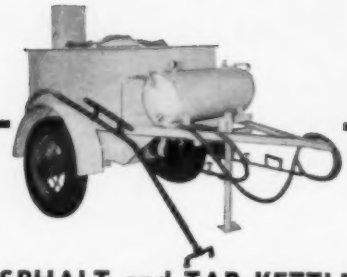

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Post-War Needs

Goals for America—Guide Lines to America's Future as reported to The Twentieth Century Fund by Stuart Chase. The Twentieth Century Fund, 330 W. 42d St., New York. 1942. viii + 134 pp. $1.00.

"A budget of our needs and resources"—a discussion of post-war national minimum standards for food, shelter, clothing, health, and education, and on the other hand, of the natural resources, man power, and physical plant which we have available to supply these needs. Written for the layman in Stuart Chase's rapid, stirring style, this book is the third of the "When the War Ends" series being published by the Twentieth Century Fund. The first analyzed current economic trends (see p. 105 of the May, 1942, issue of THE AMERICAN CITY); future volumes will take up specific problems which will have to be solved in meeting post-war demands laid out in this one.

Post-War Action

Post-War Planning.—National Resources Planning Board, Washington, D. C. 1942. 32 pp. 5¢.

An agenda for post-war action aimed toward "full employment," "security," and "building America." It presents the problems in nine major fields which must be met if the proposed aims are to be attained and outlines some of the measures by which solutions may be arrived at. The nine main spheres of action considered are: Plans for demobilization; Private enterprise and planning; Public activities; Services; Plans for security; Labor; Participation in planning by various governments; Sound planning, finance, and fiscal policies; and Plans in the international scene.

New York Post-War Planning

Proposed Post-War Works Program.—City Planning Commission, Municipal Building, New York. Supplemented Edition, Oct., 1942. 32 pp. 25¢; send remittance to the Commission, payable to the Treasurer of the City of New York (stamps not accepted).

Recommended post-war public works projects for 25 New York City departments—a reprint of the program published in May of this year, plus a supplementary list of projects proposed since.

Regional Planning for Post-War

Integration of the New England Regional Plan.—National Resources Planning Board, Region One, 2100 Federal Building, Boston, Mass. 1942. 31 pp.

A first "approximation" or framework of a regional master plan for New England, with a suggested procedure for making a more detailed plan and indications of what it might include. Presented with particular clarity.

Unpublished Planning Research

Housing and Planning Research in New York City, 1937-1942.—Prepared by Dr. Julius Fisher, with the editorial assistance of Mrs. Evelyn Robbins. Study suggested by and conducted under the auspices of The Committee on Housing and Planning Education, Citizens' Housing Council of New York, Inc., 470 Fourth Ave., New York. 1942. 77 + xxvi pp., mimeo. 50¢.

A compilation of about 250 unpublished studies and surveys current and under way on housing and city planning in the New York City area, with brief summaries of each.

Population and Housing Statistics

Census Bureau Publications.—Distributed by the National Association of Housing Officials, 1313 E. 60th St., Chicago, Ill. 1942. 4 pp.

A list of the bulletins of the U. S. Bureau of the Census containing population and housing statistics, including data on number, characteristics, facilities and equipment of housing.

British Housing and Planning

Rating and Taxation in the Housing Scene.—By F. C. R. Douglas. Design for Britain Booklets, No. 8. J. M. Dent & Sons, Ltd., London, England. 1942. 30 pp. 6d.

One of a series of booklets issued by the Co-operative Permanent Building Society in England, on a wide field of problems concerned with post-war Britain. This one discusses the relation of land and taxation systems to the problems of housing and planning, and the action which the community should adopt in regard to land ownership, with particular relation to post-war construction.

Planning Progress Report

Looking Forward.—The Maryland-National Capital Park and Planning Commission, Silver Springs, Md. 1942. 62 pp.

An attractive report of the Maryland-National Capital Park and Planning Commission which operates in that part of the nation's capital which is in Maryland. A record of the Commission's activities during the past fifteen years is delineated, its current program outlined, and some of its major future objectives indicated.

Population Study

Population Mobility—A Study of Family Movements Affecting Augusta, Ga., 1899-1939. Work Projects Administration of Georgia. Sponsored by the City of Augusta. 1942. 84 pp.

A study of population movements affecting Augusta, Georgia, and of probable future trends and rates of movement, including an analysis of the reasons why families move and some of the effects of population mobility in the city.

City Financial Statistics

Report of the Department of Local Government, State of New Jersey, 1941. 1942. 598 pp.

Statements of the financial condition of the municipalities and counties of the state of New Jersey, showing the costs of local government, the cost of principal services, the amount of debt, and other pertinent related data.

Manpower Problem

Manpower—A Sumary of the British Experience.—By Eric H. Biddle. Public Administration Service, 1313 E. 60th St., Chicago, Ill. 1942. 28 pp. 75¢.

A brief summary and evaluation of the organization, policy, and main features of the British manpower program, by which 23,000,000 out of 33,000,000 people between the ages of 18 and 65 were mobilized for the war effort.

Geography of Urban Crime

Juvenile Delinquency and Urban Areas.—By Clifford R. Shaw and Henry D. McKay, with chapters by Norman S. Hayner, Paul G. Cressey, Clarence W. Schroeder, T. Earl Sullenger, Earl R. Moses, and Calvin F. Schmid. The University of Chicago Press, Chicago, Ill. 1942. xxxii + 451 pp. $4.50 from THE AMERICAN CITY.

A study of the geography of urban crime—of rates of delinquents in relation to differences in the economic, social, and cultural characteristics of different neighborhoods in 20 American cities; and the implications, for treatment and prevention, of the findings. Results of a study in progress for 20 years.

Other Reports Received

CHICAGO, ILL.—Annual Report, Comptroller, 1941. 118 pp.

FILLMORE, CALIF.—"What Next," by Ben Blanchard—Annual Report, year ended June 30, 1942. 45 pp., mimeo.

HUNTINGTON PARK, CALIF.—Annual Report, year ended June 30, 1942. 32 pp.

LOS ANGELES, CALIF.—Integration of Public Library Services in the Los Angeles Area. By Ronald M. Ketcham. Studies in Local Government, No. 6. Bureau of Governmental Research, University of California at Los Angeles. 1942. 185 pp., mimeo, 75c.

NEWARK, N. J.—Health Report, 1941. 57 pp., offset.

NEW YORK, N. Y.—"Unemployment Insurance and Home Relief." Department of Welfare. 24 pp., mimeo.

OGLESBY, ILL.—Semi-annual Report, May 1, 1942 - Oct. 31, 1942. 29 pp.

PASADENA, CALIF.—Annual Report, City Manager, year ended June 30, 1942. 50 pp., offset.

—Annual Report, Water Department, year ended June 30, 1942. 69 pp.

PORTLAND, ORE.—Annual Report, City Auditor, six months ended June 30, 1942. 115 pp.

SEATTLE, WASH.—Annual Report, Department of Lighting, 1941.

STRATFORD, CONN.—Annual Report, year ended Mar. 31, 1942. 48 pp.

Grass Roots Politics—National Voting Behavior of Typical States. By Harold F. Cosnell. American Council on Public Affairs, 2153 Florida Ave., Washington, D. C., 1942. 195 pp.

The Library in the Present World Crisis.—Proceedings of the Section on Public Library Administration Sponsored by the Washington Library Association at the Seventh Annual Institute of Government, University of Washington, June 24, 25, and 26, 1942.— Published by the Bureau of Government Research, University of Washington, Seattle, Wash., in cooperation with the Washington State Library, Olympia, Wash. 1942. 33 pp., mimeo.

Municipal Preparedness for Peace

RESOLVED by the American Municipal Association in 19th Annual Conference assembled, that effort should now be directed to municipal planning for the post-war period, that local debts be paid, that sound financial policies be adopted, that plans be made for future public construction where needed, and that reserves be created for future public construction or other necessary purposes to enable municipalities to meet their obligations in connection with converting war industries to peacetime construction and returning the men now serving in the armed forces to civilian occupations.

—A resolution adopted by A. M. A. at its Chicago meeting on October 23, 1942.

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Burroughs Mechanical Service

Keeps Your Office Machines "In Action"

Systematic inspection, lubrication and adjustment of your Burroughs machines, performed by Burroughs factory-trained, factory-controlled service men, can prove a decisive factor in meeting wartime accounting problems. This Burroughs service helps you utilize the full efficiency of your machines in accomplishing more work in less time—safeguards against work stoppage and lost time caused by preventable interruptions. All work is guaranteed. All repairs and replacements are made with genuine Burroughs parts.

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MANUFACTURING FOR WAR

Manufacture of aircraft equipment for the Army Air Forces and Burroughs figuring equipment for the Army, Navy, U. S. Government and the nation's many war activities is the vital task assigned to Burroughs in the Victory Program.

Burroughs

Conventions— When and Where

Dec. 11-13—Baltimore, Md.
AMERICAN PUBLIC WELFARE ASSOCIATION. Annual Meeting. (Lord Baltimore Hotel) Dir., Fred K. Hoehler, 1313 E. 60th St., Chicago, Ill.

Dec. 18-19—Yuma, Ariz.
ARIZONA MUNICIPAL LEAGUE. Semi-Annual Meeting. Sec., James Girand, City Hall, Phoenix, Ariz.

*Dec. 27-28—Chicago, Ill.
AMERICAN SOCIETY FOR PUBLIC ADMINISTRATION. (Hotel Sherman) Sec.-Treas., MacDonald Salter, 1313 E. 60th St., Chicago, Ill.

Dec. 30—New York, N. Y.
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Midwinter meeting. (Hotel Commodore) Sec., R. K. Blanchard, 50 W. 50th St., New York, N. Y.

Jan. 5—Cheyenne, Wyo.
LEAGUE OF WYOMING MUNICIPALITIES. (Hotel Plains) Exec. Sec., G. R. McConnell, Laramie, Wyo.

Jan. 20-22—New York, N. Y.
AMERICAN SOCIETY OF CIVIL ENGINEERS. Annual Meeting. (Engineering Societies Building) Sec., George T. Seabury, 33 W. 39th St., New York, N. Y.

Jan. 22—New York, N. Y.
NEW YORK STATE SEWAGE WORKS ASSOCIATION. (Hotel McAlpin) Sec.-Treas., A. S. Bedell, State Dept. of Health, Albany, N. Y.

Jan. 22-23—New York, N. Y.
AMERICAN INSTITUTE OF PLANNERS. Annual Meeting. (Hotel Pennsylvania) Exec. Sec., Barbara Terrett, 1313 E. 60th St., Chicago, Ill.

Jan. 25-26—New York, N. Y.
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS. Annual Meeting. Corresponding Sec., Bradford Williams, 9 Park St., Boston, Mass.

Jan. 25-27—Lafayette, Ind.
PURDUE ROAD SCHOOL. Annual Meeting. (Memorial Union Building, Purdue University) Sec., Ben H. Petty, Engineering Extension Dept., Purdue University, Lafayette, Ind.

Feb. 10-12—Ann Arbor, Mich.
CONFERENCE ON HIGHWAY ENGINEERING. Annual Conference. (Michigan Union) Sec., R. L. Morrison, University of Michigan, Ann Arbor, Mich.

Feb. 17-18—Chicago, Ill.
AMERICAN CONCRETE PIPE ASSOCIATION. Annual Convention. (Hotel Drake) Sec., M. W. Loving, 33 W. Grand Ave., Chicago, Ill.

*Feb. 17-18—Chattanooga, Tenn.
SOUTHEASTERN ASSOCIATION OF STATE HIGHWAY OFFICIALS. (Hotel Patten) Sec.-Treas., Berrien W. Davis, State Maintenance Engineer, Raleigh, N. C.

Feb. 17-19—New York, N. Y.
ASSOCIATION OF HIGHWAY OFFICIALS OF NORTH ATLANTIC STATES. Highway Problems Conference. (Hotel Pennsylvania) Sec.-Treas., A. Lee Grover, State Highway Dept., Trenton, N. J.

Feb. 26-Mar. 2—St. Louis, Mo.
AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS. Annual Convention. (Municipal Auditorium) Sec., S. D. Shankland, 1201 16th St., N.W., Washington, D. C.

Feb. (Date Later)—Harrisburg, Pa.
PENNSYLVANIA STATE ASSOCIATION OF BOROUGHS. Pres., Thomas F. Chrostwaite, Hanover, Pa.

Feb. (Date Later)—College Station, Texas
TEXAS WATER WORKS SHORT SCHOOL. (A. & M. College) Sec., V. M. Ehlers, Austin, Texas.

Mar. (Date Later)—Trenton, N. J.
NEW JERSEY SEWAGE WORKS ASSOCIATION. (Stacy-Trent Hotel) Sec., John R. Downes, Plainfield, N. J.

April 7-9—Hamilton, Ont.
AMERICAN WATERWORKS ASSOCIATION—CANADIAN SECTION. (Royal Connaught Hotel) Sec., Dr. A. E. Berry, Ontario Dept. of Health, Parliament Buildings, Toronto, Ont.

April 23-24—Excelsior Springs, Mo.
MISSOURI ASSOCIATION OF PUBLIC UTILITIES. Annual Meeting. (Hotel Elius) Ass't. Sec., Jesse Blythe, 101 W. High St., Jefferson City, Mo.

May 10—Chicago, Ill.
NATIONAL FIRE PROTECTION ASSOCIATION. Annual Meeting. (Palmer House) M'ng. Dir., Percy Bugbee, 60 Batterymarch St., Boston, Mass.

May 21-25—Cleveland, Ohio
COMMUNITY CHESTS AND COUNCILS, INC. Annual Meeting. (Hotel Cleveland) Exec. Vice-Pres., Allen T. Burns, 155 East 44th St., New York, N. Y.

* First appearance of item on this page.

City Manager Appointments

Leland Adams has succeeded *Leslie Higgins* as town manager of Merill, Maine.

J. S. Butler has replaced *J. W. Coleman* as city manager of Walters, Okla.

Carnelius W. Frost, former director of public welfare at Bangor, has been appointed manager of Belfast, Maine, to serve while Mr. Adams is in federal service.

Erbin E. Jones has succeeded *Fred R. Williams* at Pawhuska, Okla.

Robert A. Meade has been appointed city manager of Redwood City, Calif. This fills a vacancy created last August.

L. J. Mulholhand, former city treasurer, has taken over the duties as manager of Mount Pleasant, Mich., while *W. K. Willman* is in the army air force.

M. J. Smith, Jr., former city engineer, has succeeded *W. H. Rodgers* as city manager of Lubbock, Texas.

Byron A. Robinson has been appointed manager of Bellows Falls and Rockingham, Vt., to serve during the military leave of *C. C. Congdon*.

Everard W. Wentworth has been appointed city manager of Bridgton, Maine, to succeed *A. K. Thorndike* recently promoted to Ludlow, Vt.

J. Harold Webster, who has been acting manager since July, was appointed acting city manager of South Portland, Maine, effective November 2.

CLARENCE E. RIDLEY,
Executive Director, International City Managers' Assoc.

Municipal Bond Market

Some recent sales of new issues as reported in November issues of *The Bond Buyer:*

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$304,000	Columbus, Ohio, Deficiency	2.0	4.85 Avg.	1.16
2,500,000	Chicago, Ill., Sanitary District, Refunding	2.0	10-20 O.-A.	1.98
150,000	Cedar Rapids, Iowa, Airport	1.5	11-Avg.	1.32
100,000	Portland, Me., Permanent Improvement	1.5	1-20 Ser.	1.37
250,000	Nashville, Tenn., Street of 1942	1.5	12 Avg.	1.41
200,000	New Britain, Conn., Water Fund	2.0	11.17 Avg.	1.414
209,000	Toledo, Ohio, Indebtedness Liquidating	2.25	5.66 Avg.	1.49
300,000	Westchester Co., N. Y., Airport Acquisition	1.70	10.85 Avg.	1.66
1,176,000	Detroit, Mich., Sewage Disposal System Revenue	3.25	3.5 Avg.	2.046
5,990,000	Nashville, Tenn., Electric Power Revenue	2.25	14 Avg.	2.05
234,000	Defiance, Ohio, School	2.25	9.5 Avg.	1.64

How Outstanding Municipal Bonds Are Held

Recent liquidation of municipals by insurance companies and public trust funds is the second most important development in the field of municipal finance since Pearl Harbor. The first is, of course, the contraction in the volume of new borrowing by states, cities, etc., due to wartime restrictions. . . .

Every dealer, and many investors, are wondering how far this liquidation trend will go. Obviously, no complete answer is possible. What might be the policy of an institution or a trust fund today is subject to day-to-day revision.

Most interested dealers are familiar with the nature and extent of insurance company holdings as a result of close contacts and availability of public financial reports including schedules of investments held. Many of the larger public trust and sinking funds also make public annually schedules of investment holdings, although some do not.

A breakdown of the total volume of outstanding municipals, according to ownership, was undertaken by the Treasury Department on the basis of June 30, 1941, reports. This showed that, of $20,000,000,000 bonds outstanding $2,100,000,000 were owned by insurance companies; $4,100,000,000 by state and local government trust, investment, sinking and other funds; $1,100,000,000 by mutual savings banks and other tax-exempt institutions, and $700,000,000 by federal funds, or a total of $8,000,000,000, ownership of which conferred little or no benefit by virtue of the tax-exempt status of the bonds. It is from this large reservoir that liquidation in notable volume may develop as a result of the wide current spread in yields between best-grade municipals and taxable Federal Government issues.

—From *The Bond Buyer* for November 28, 1942.

KEEP YOUR STREET FLUSHERS ROLLING!

IT'S PATRIOTIC!
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Scarcity of critical materials . . . plus U. S. Army orders for Etnyre "Black Topper" Distributors . . . have practically banned production of Street Flushers (except on high priority ratings) for the duration. It's **patriotic** . . . it's **practical** to take **better care** of your present equipment. Write us for suggestions and repair parts . . . accompany part orders with priority certificates to save time.

ETNYRE

Sanitary STREET FLUSHERS

E. D. ETNYRE & CO. Main Office & Plant OREGON, ILLINOIS

GOOD NEWS for City Managements

Here are Outdoor Water Devices that don't freeze up; that require little attention and practically no repairs and when there is need for an occasional rewashering the change can be made without digging up fixture.

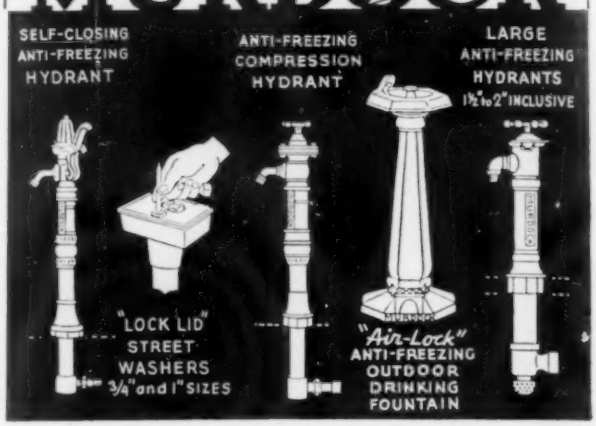
They are built to last—built to withstand the abuse to which outdoor water devices are subjected by the public.

It pays to buy MURDOCK

THE MURDOCK MFG. & SUP. CO.
426 Plum Street Cincinnati, Ohio

The Most Reliable Name on Water Service Devices

MURDOCK


SELF-CLOSING ANTI-FREEZING HYDRANT
ANTI-FREEZING COMPRESSION HYDRANT
LARGE ANTI-FREEZING HYDRANTS 1½ to 2" INCLUSIVE
"LOCK LID" STREET WASHERS ¾" and 1" SIZES
"Air-Lock" ANTI-FREEZING OUTDOOR DRINKING FOUNTAIN

SHELDON
LABORATORY FURNITURE FOR CONTROL

Sheldon does more than manufacture a complete line of Laboratory Furniture. Experienced Sheldon Planning and Installation Engineers will help you plan efficient facilities for laboratory control. They also will assist you in selecting and installing furniture which will meet your needs efficiently and economically.

Write today for Catalog. Ask that our Engineer call.

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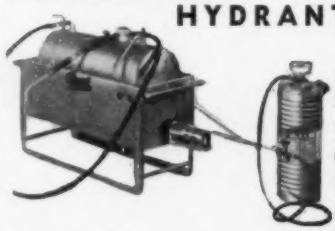
THAW CULVERTS AND HYDRANTS WITH AN AEROIL



NO. 98 PORTABLE STEAM THAWER

A handy steam plant with a detachable thawing torch. Used by leading Highway Departments for Culvert Thawing. Special Culvert Nozzle (10 ft.) available. Send for WINTER CATALOG No. 234A including Concrete Heaters, Portable Coil Water Heaters, Thawing Torches, Ground Thawers, etc.

For ASPHALT Airport and Road Construction and Maintenance, send for new AEROIL CATALOG NO. 240A—Asphalt Kettles, Cut-back and Emulsion Sprayers, Lead Furnaces, Asphalt Tools, etc.

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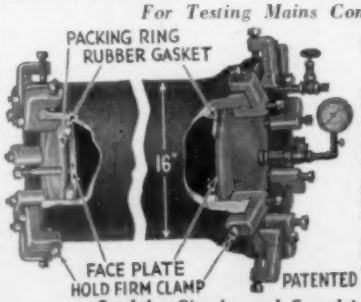
A NEW TEST PLUG

For Testing Mains Conveying



WATER GAS OIL AIR

For testing cast iron, steel, transite, soil and concrete pipe lines, without the necessity of valves; test pipe as you lay them; eliminate open trench and hazards; special for testing reclaimed pipe, valves and fittings. Installed by any unskilled laborer; withstands 300 lbs. hydrostatic pressure, light in weight; same clamps fit many sizes of pipe. Made in all sizes. Used by the City of Chicago, contractors and municipalities. PATENTED

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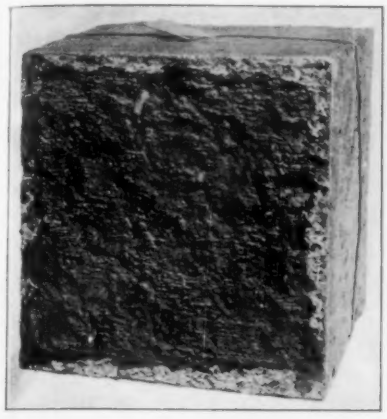
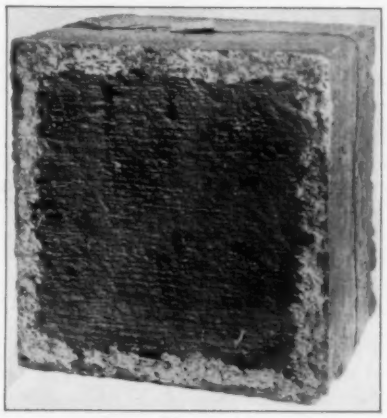
Buy War Bonds and Stamps. Help win the war for FREEDOM.

News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings





These two samples of concrete have been subjected to freezing and thawing tests. Both were made from concrete having the same workability characteristics. However, the sample on the left contains on admixture, while the one on the right has been treated with HP-7. Th sample on the left actually required more cement in order to compensate for the workability that the admixture made possible. The comparative durability of the two samples is plainly shown by the illustration.

Increasing Durability of Concrete Pavement

A foaming, cement-dispersing agent which introduces small amounts of air into concrete will markedly improve its quality and resistance to wear and scaling, according to a recent research bulletin published by Master Builders Co., 7012 Euclid Ave., Cleveland, Ohio. Although the dispersion of cement has been recognized generally as a beneficial action, the introduction of air represents a departure from common practice.

Construction men have realized that a good mix requires not only strength but also workability in order to give the high type of riding surface characteristic of modern roads and streets. This has resulted in many instances in a concrete rich in cement having a tendency to scale and to be subject to attack by extremes in weather.

Master Builders' admixture HP-7 is reported to overcome this fault. The manufacturer asserts that its use enables the engineers to design mixes that are workable yet do not require this high cement content. This results in less bleeding and appears to add to the durability of the product particularly in regard to scaling. The foaming agent increases the amount of air in the mix, thereby increasing the fattiness.

Freezing and thawing tests published by Master Builders compare concrete with similar workability characteristics and show definite advantages in the resistance of the concrete treated with HP-7. Furthermore, the tests show that the compressive strength is not impaired but is slightly increased despite the decrease in cement content.

By designing the mix with HP-7, the manufacturer states that all advantages of cement dispersion are gained and air-incorporation is secured at no increase in cost.

Wartime Trident Meters

The entire line of Trident cold-water meters and repair parts in all sizes are now being manufactured to meet the material restrictions of the War Production Board's Water Meter Limitation Order L-154, according to the Neptune Meter Co., 50 W. 50th St., New York. The manufacturer asserts that all parts will be interchangeable with those of meters already in service. Cast-iron parts receive a protective coating of corrosion-resisting paint. Steel bolts, studs, nuts, and washers also have a protective plating.

Lambert and Thomson meters will not be manufactured for the duration. However, repair parts still will be available and will meet War Production Board restrictions.

Rusta-Restor Sales in New England

The Public Works Supply Co., Lynn, Mass., now represents The Gregg Co., 1418 Walnut St., Philadelphia, Pa., in the sale of Rusta-Restor cathodic tank protection equipment in the New England States, it was announced recently.

The Public Works Supply Co. is well known in the water-works field. It has been the selling agent for the Cement Lined Pipe Co., of Lynn, Mass., for many years. It also is sales representative in New England for equipment firms such as the Darling Valve Mfg. Co., Williamsport, Pa.; Ford Meter Box Co., Wabash, Ind., and the Chicago Pneumatic Tool Co., 6 East 44th St., New York.

H. W. Jacobs is president of the company with Everett Howe treasurer and Walter Arnold as manager of sales.

Cathodic rust prevention for steel tanks has made rapid advances in the water-works industry and is being accepted widely as a method of maintaining the interior of water tanks. Equipment made by Rusta-Restor, 1450 W. State St., Fremont, Ohio, is unique in that it has eliminated the need for the customary electrode located in the center of the tank.

Care of Rubber V-Belts

Plain and impartial facts on the maintenance of rubber V-belts are contained in a new bulletin issued by the Allis-Chalmers Mfg. Co., Texrope Div., Milwaukee, Wis.

Designed as a guide to cover the maintenance of all types of V-belts, it discusses the principle of the V-belt's operation, the purpose of tension in the belt, and it discusses how to handle multiple V-belts giving practical preventative suggestions regarding their maintenance.

Jeffrey

FOR A COMPLETE LINE OF SEWAGE AND WATER-TREATMENT EQUIPMENT . .

Bar screens (mechanically-cleaned)
Chemical feeders (electric vibrating)
Floctrols (controlled flocculation)
Grit washers
Grit collectors
Primary and secondary sludge collectors
Sludge elevators
Screenings grinders
Scum removers
(All Patented)

Jeffrey engineers have had years of experience—have made many installations—can offer technical data on both equipment and plant design. Write

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Scranton

THE GLORY OF DEMOCRACY

THE sacrifices that are needed in order to win the war are apparent to us all.

The Treasury's appeals to buy War Bonds, the Government's pleas to conserve gas and rubber, the economies required to avoid inflation, the necessity of rationing many essential commodities—all these have become vital in the minds of our people.

Necessity has awakened us, not only to the size of the task before us, but to the fact that our future as a nation is at stake; and in characteristic fashion we-*all* are responding.

Our hearts speak, our purses are open wide; and regardless of creed, or color, or political convictions, our honest differences of opinion are being dissipated before the issue that confronts us.

This is the glory of democracy: that a man may think as he will, speak as he will, vote as he will, and worship God in his own way; yet in the hour of peril to the State, that which is for the greatest good of all is not only his most compelling thought but the strongest prompting of his heart.

In that hour his thought is no longer of himself but of his country; and it is as though his soul were crying out those memorable words of Plato: "Man was not born for himself alone but for his country."

BUY WAR BONDS

Thos. J. Watson, President

INTERNATIONAL BUSINESS MACHINES CORPORATION

The Royer Junior electric sludge pulverizer. This equipment is also powered by Briggs & Stratton gasoline motors. For the duration Royer Foundry is furnishing the equipment with steel wheels which can be replaced with pneumatic tires when they are again available.

Making Sludge into a Soil Conditioner

To help meet the problem of sludge disposal, sewage-works operators have drawn on the experience of Royer engineers who have long built machines for shredding, lump-breaking, and refuse removal from sand, soil, and other materials. The ordinary sludge cake, while useful as a soil conditioner, is generally lumpy, difficult to handle, and hard to blend with other fertilizing ingredients.

The Royer Foundry & Machine Co., 165 Pringle St., Kingston, Pa., builds a complete line of sewage sludge disintegrators, consisting of 12 stationary and portable models, to meet the requirements of any sewage plant.

The pulverizing mechanism consists essentially of an endless belt carrying rows of steel teeth. This belt travels at an angle of 45 degrees and will shred the sludge into finely divided, easily spread particles, discharging them into a stockpile or onto a truck.

This equipment is finding increasing use by municipal sewage plants and also by parks for shredding, mixing, and aerating compost. It is possible to blend sludge with ammonium sulphate, phosphate, or other ingredients if so desired or even to mix it with dirt to make a satisfactory finished product.

Operators have discovered that when sludge is pulverized in this manner, its salability is increased greatly. Many cities are selling the sludge as a soil conditioner at prices ranging from $11 to $20 per ton.

Quinn Asks Return of Cylinders

The shortage of cylinders for chlorine, ammonia, carbon dioxide, and other compressed gases needed by many essential industries is becoming more and more acute and, to prevent drastic restrictions in the distribution of these chemicals, all users and transportation companies must cooperate in returning the containers to the producers, warns R. J. Quinn of the Mathieson Alkali Works, Inc., 60 E. 42nd St., New York.

"Most users of compressed gases are probably trying to return their cylinders promptly, but many find that the railroads and the trucking companies are becoming increasingly unwilling to handle small shipments," states Mr. Quinn. "This situation can be remedied, however, if transportation managers fully understand the importance of getting cylinders back for refilling as quickly as possible and if shippers of cylinders will cooperate with the transport companies in arranging shipments that can be handled economically.

"No new cylinders can be obtained, and the number being diverted from civilian use by our war effort is constantly increasing," Mr. Quinn points out. "But if all concerned will keep the available supply in constant circulation, it should be possible to serve satisfactorily all important users of compressed gases.

"To everyone who is helping in this vital task, we want to say 'Thanks for the Tanks!'"

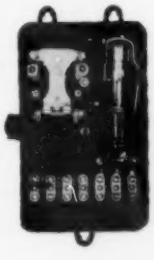
Water Detector for Underground Gas Tanks

A new electronic control to detect water seepage in gasoline storage tanks has been placed on the market by Photoswitch, Inc., 21 Chestnut St., Cambridge, Mass. This control is known as the Photoswitch Water Detector Lock P15NH.

A probe fitting, wired to an electronic control, is mounted in a standard pipe fitting on the top surface of the tank, with a probe rod projecting down to the level at which water seepage is to be detected. When water rises to contact the probe tip it completes an electrical circuit, and the water detector lock operates turning off pumping equipment and actuating an alarm circuit. This equipment gives absolute protection against the possibility of pumping water with the gasoline.

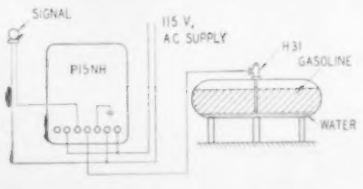
This equipment operates on either 115 or 230 volts A.C. Battery-operated units are also available as standard.

The control is supplied in a weatherproof, pressed steel housing, finished in green crystal. Explosion-proof housings are also available.



PHOTOSWITCH CONTROL P15NH

INDICATING WATER LEVEL IN GASOLINE STORAGE TANKS



Water in gasoline storage tanks is no longer a problem when controlled with this new indicator.

AIR *for the Bacteria*

The Back River Sewage Treatment Station of the City of Baltimore requires large quantities of compressed air continuously to activate the sludge in the aeration tanks where organic matter is broken down by bacterial action.

To supply this air three motor-driven

DE LAVAL TWO-STAGE COMPRESSORS

have been installed, each rated at 16,500 cu. ft. of air per min. against 7.5 lb. per sq. in. discharge pressure with 3 in. water column suction.

De Laval centrifugal blowers and compressors are built for all capacities, for all pressures up to 100 psi, and for motor or steam turbine drive.

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STEAM TURBINE CO.
TRENTON, NEW JERSEY

CARSON CLAMPS
And Mechanical Joints
STOP LEAKS

Glands and bolts made of corrosion-resistant charcoal (pearlitic) cast iron—last as long as cast iron pipe. Bell clamps and mechanical-joint. Glands accommodate variations in pipe dimensions, insure uniform compression of rubber gasket.

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Stewart Non-Climbable Chain Link Wire Fences provide continuous, unfailing protection for reservoirs, waterworks and sewage disposal plants against unwarranted trespass. Don't delay . . . surround your property with a Stewart Fence NOW! Wire, write or phone Hemlock 1985, or call in the Stewart representative located in your vicinity. Sales and erection offices in all principal cities.

Catalog I-41 giving full details will be sent on request.

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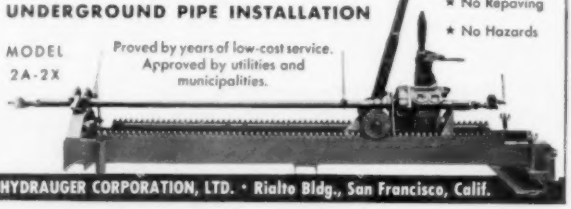

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There are now nearly 800 public officials enrolled in these courses in nearly 300 cities in 44 states.

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THE INTERNATIONAL CITY MANAGERS' ASSOCIATION
1313 EAST 60TH STREET CHICAGO

A WORLD-FAMOUS *Chicago Hotel*

Distinguished visitors have, by their patronage, made The Blackstone one of the World's most famous hotels. Here, beautiful appointments, quiet luxury, perfect service, excellent cuisine, and sparkling entertainment in the brilliant Mayfair Room—combine to satisfy a notable clientele.

A. S. KIRKEBY, *Managing Director*

The Blackstone
South Michigan Ave.
CHICAGO

The Alfite carbon dioxide fire-fighting equipment quenches fires that do not respond easily to other methods. Alcohol fires and fires originating in electric machinery both are smothered instantly with Alcofoam with a minimum of damage to both equipment and material.

Carbon Dioxide for Fire Protection

Any fire can become disastrous, but fires in flammable liquids and in electrical machinery are particularly hazardous under the stress of wartime production.

The new Alfite 100-lb. carbon-dioxide engine shown here is recommended for fires in flammable liquids, alcohol storage, and electrical machinery. It smothers fires instantly with non-corrosive, non-poisonous, odorless carbon - dioxide gas which expands to 450 times its stored volume. Fires extinguished in this manner produce a minimum of damage to the burning material.

The outfit is equipped with an Anti-Statik horn to protect the operator from static charge, according to the manufacturer. American-La France-Foamite Corp., Elmira, N. Y.

Wartime Drainage Pipe Finding Wide Acceptance

The wood drainage pipe developed and now being produced by the Armco Drainage Products Assn., Middletown, Ohio, is finding wide acceptance as a substitute for corrugated pipe in culvert construction on drainage work.

To date well over 100,000 lineal feet of this pipe have been used in road and street drainage work, airport construction, and other critical places. It has saved over 2,600 tons of sheet metal. The length of its life is anticipated at from five to ten years. At the end of that time a permanent type of culvert may be threaded through the present opening.

These culvert pipes are constructed entirely of short pieces of wood. The octagonal design makes it possible to utilize the full strength of the material, taking advantage of side support in the same manner that corrugated pipe does. The units are shop assembled and fabricated in lengths of 12 feet or more and can be joined simply in the field to make a single structure.

The new Armco emergency wood pipe shows its ability to carry concentrated loads. Here a 48-in. pipe is supporting a dead load of 130 tons. In other tests the pipe supported a live axle load of 14 tons without failing.

VENTURI METERS

Type M Register - Indicator - Recorder

Water Works men have so long relied upon Builders Venturi Meters for accurate records of main line flow that we suspect they sometimes just take it for granted that they know all about them!

Do you? Have you the latest bulletins on file? Look and see; if you haven't Bulletin 293 B, we suggest you write Builders - Providence, Inc., 9 Codding Street, Providence R. I., and ask for a copy.

Sincerely yours,

BUILDERS
WATER AND SEWAGE WORKS Equipment

INCINERATION ENGINEERS
NICHOLS ENGINEERING & RESEARCH CORPORATION
60 WALL TOWER NEW YORK, N. Y.
Consultants • Designers • Constructors

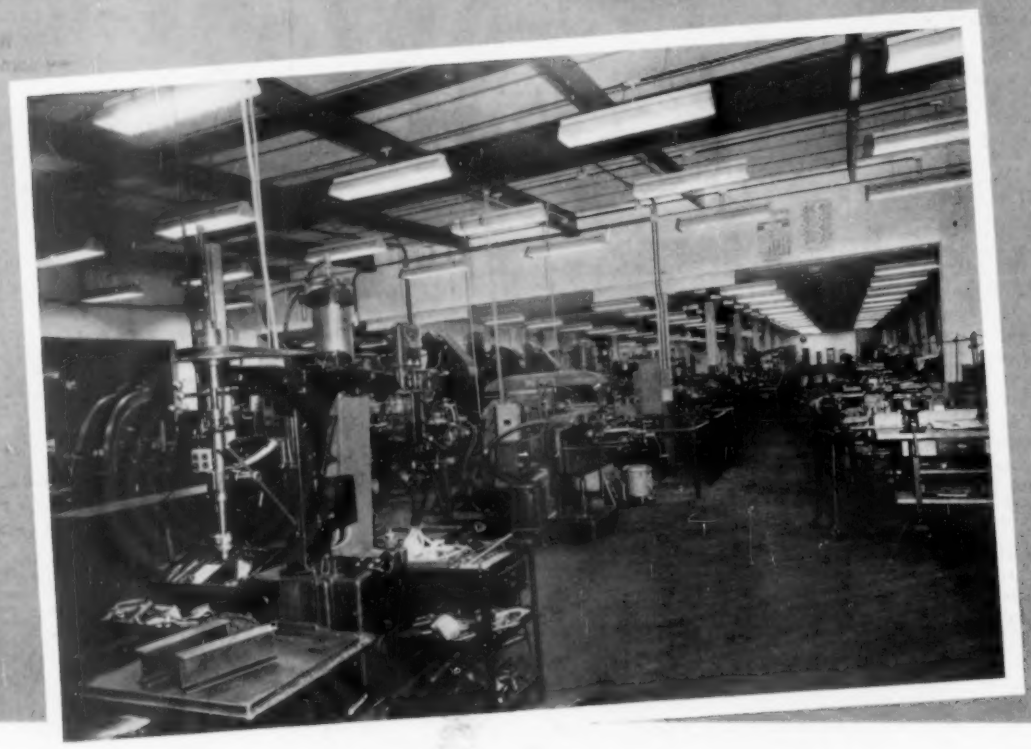
EVERYBODY EVERY PAYDAY 10%
IN WAR BONDS
★ ★ ★ ★ ★ ★ ★ ★ ★
New Goal for Payroll Savings Plan!

Along with increased war production goals go increased costs . . . extra billions which must be raised, and raised fast, to win this war. That means we must raise our sights all along the line, with every firm offering every American with a regular income the chance to buy more *War Bonds*. YOUR help is asked in encouraging employees to put at least 10 per cent of their pay into War Bonds every payday, through the Payroll Savings Plan. For details of the Plan, approved by organized labor, write, wire, or phone Treasury Department Section T, 709 12th Street N.W., Washington, D. C.

U. S. War Savings Bonds

IT'S EASY TO KEEP THESE LIGHTS *Bright*—

THE REFLECTORS ARE ALZAK* ALUMINUM



These lights were *engineered* to give the 30 to 35 foot-candles of light needed by the machine operators to let them work most efficiently. The reflectors are Alzak* Aluminum, so it's no trick to maintain their high reflectivity. (You can't buy new ones now, but you can keep them like new.)

Alzak Reflectors have an Alumilite finish (process patented); smooth, hard and tarnish-resistant. This surface does not scratch easily and dirt does not cling to it readily. That's why lighting systems equipped with Alzak Aluminum Reflectors are easy to keep working at high efficiency throughout the years.

*Registered trade-mark

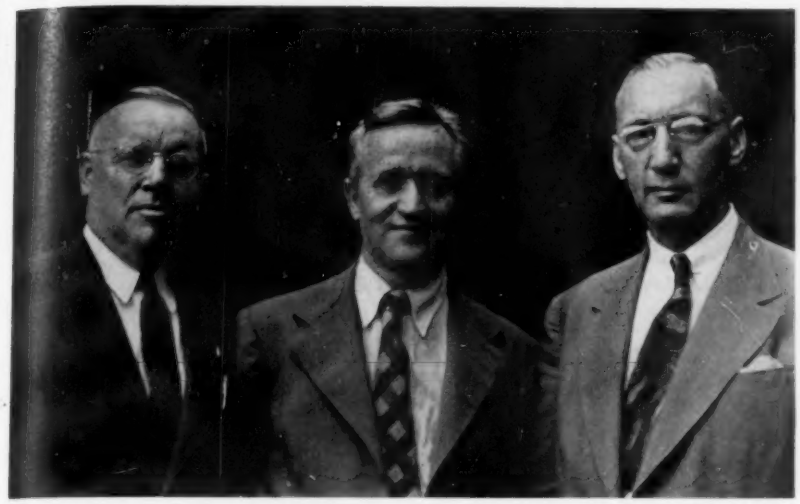
Dusting occasionally with a dry cloth may be all that Alzak Reflectors need. Or, if they're working out-of-doors or where fumes are in the air, they probably should be washed with mild soap and water. Under more severe conditions, they may require a different treatment.

The booklet, "Instructions for the Protection and Maintenance of Alumilite Finishes and Alzak Reflectors," contains data of considerable value to cleaning squads. For copies, or for posters bearing similar information, write ALUMINUM COMPANY OF AMERICA, 1945 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

Mention THE AMERICAN CITY—it helps.

120 Years with Hazard



Exactly 120 years of service with Hazard Insulated Wire Works, Division of The Okonite Co., Wilkes-Barre, Pa., are represented by this informal snapshot. Roy Allen, left; Dan Morgan, center; and Carl Brodhun, Sales Mgr. for the company. The three men started together with the company in 1898 when it was known as the Hazard Mfg. Co., the same year that the company began manufacturing insulated wire along with the wire rope they had been making for practically a century. All three men have traveled extensively for the company and are well known to men connected with utilities, municipalities, and industry.

Freeze-proofing Water for Emergency Fire Protection

The Office of Civilian Defense recommends that pails of water be placed in strategic locations for emergency use as protection against incendiary bombs. Since it is vitally important that this water is not frozen when it is needed, the Calcium Chloride Association, 4145 Penobscot Bldg., Detroit, Mich., has presented data showing how calcium chloride can be used to protect this emergency water supply from freezing.

The concentrations necessary are as follows:

Lbs. of Flake $CaCl_2$ Per Gal. of Solution	Freezing Point
3.5 (—4.20 lbs. per gal. water)	—26°F
2.0 (—2.20 lbs. per gal. water)	—10°F
2.5 (—2.85 lbs. per gal. water)	— 0°F
3.0 (—3.50 lbs. per gal. water)	—10°F
4.0 (—4.94 lbs. per gal. water)	—50°F

Water so protected does not evaporate rapidly or become foul as quickly as untreated water, neither does it breed mosquitoes or other water organisms. It has the approval of the Federal Government and the National Board of Fire Underwriters. It has been used successfully for a number of years in warehouses, grain elevators, farm buildings, and similar places.

The Association recommends the use of steel drums or tight wooden barrels protected inside by a coating of asphalt. The barrels should be filled half way with water, then the chemical should be added and the barrel filled to the desired level.

Sprinkler systems that may be subjected to freezing temperatures also can be protected with calcium chloride.

Personnel Advancements for The Heil Company

Two changes have been made in plant personnel for The Heil Co., Milwaukee, Wis. Herman C. Frentzel, Chief Engineer, has been appointed Works Manager and Charles G. Eisenberg has been promoted from Chief Engineer of the Body and Hoist Division to Chief Inspector.

Spiral Action with New Flocculators

Departing somewhat from the conventional design of flocculators, the Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill., is now making what it terms the Straightline Mixers. In this type of equipment the shaft is placed parallel to the flow, and the paddles produce a spiral mixing action. The manufacturer claims a superior coagulating action and prevention of short-circuiting.

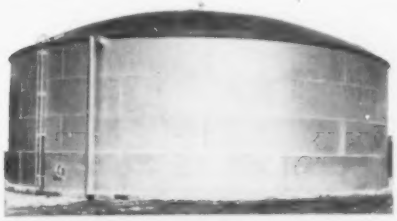
Improved flocculation and constant savings in chemicals also are assured by the use of stage mix. This reduces greatly the velocity of the paddles from a maximum of 1.8 ft. per second at the influent end to about 1.00 ft. per second or less at the effluent end of the tank.

The use of pivoted paddles, the manufacturer asserts, gives an installation additional flexibility not obtained by fixed paddles. By setting the paddles at an angle to the direction of travel the degree of agitation can be controlled throughout the length of the tank.

PITTSBURGH • DES MOINES

Steel RESERVOIRS

P-DM Steel Reservoirs and Standpipes provide greatest economy in water storage—are permanently water-tight, may be erected at any time of year, and for maintenance require but a periodic coat of paint. All types and sizes up to 4,000,000 gallons. Bulletin No. 102.



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Ringstyle COUPLINGS

The first improvement in water meter couplings in fifty years.

RINGSTYLE Couplings connect direct to copper tubing or iron pipe, saving pipe joints and fittings. Made in straight and angle patterns. Let us send you a sample.

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★ ★ ★ *Specialists in Public Safety* ★ ★ ★

MANUFACTURERS OF EMERGENCY SIGNALING SYSTEMS

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★ POLICE SIGNALING ★ INDUSTRIAL FIRE ALARM ★ FIRE AND WATCHMEN'S SUPERVISORY

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IF it's *necessary* for you to travel, and if your trips take you to Statler cities, assure yourself of *comfort* and *relaxation* by staying at Statler Hotels.

At Statler Hotels, you get the three wartime necessities for travelers today: Comfortable rooms, delicious food, and restful relaxation.

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DETROIT • ST. LOUIS
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NEW YORK Hotel Pennsylvania
PITTSBURGH Hotel William Penn
WASHINGTON, D. C. (Now Building)

Proportioneers new midget high-pressure chemical feeder

Midget High-Pressure Chemical Feeders

A new midget chemical feeder has been produced by Proportioneers, Inc., 99 Codding St., Providence, R. I., which conforms to modern priority restrictions.

This unit will inject chemicals into pipes having pressures up to 200 lbs. per sq. in. The Fluid-Sealed Yoke permits the plunger to operate when constantly submerged. This prevents "building up" on the plunger when it is alternately exposed to chemicals and then drawn out and exposed to the air. This type of yoke also tends to keep the packing in better condition and definitely sealed against the loss of prime.

The use of plastics is one of the predominant new innovations in this new small feeder.

Current war aims are satisfied by eliminating the use of scarce materials formerly required. The plastic check valve is of quick-uncoupling type, eliminating the use of hose clamps.

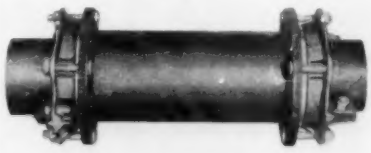
Forest Fire Engines Ready for Action

Fire has always been a threat on the heavily forested West Coast, but now it takes on an added menace—the danger of fires set by incendiary bombs dropped from Japanese planes.

However, the California Division of Forestry is prepared for such emergencies. Outstanding among mechanical means for timber fire-fighting is the bulldozer; and here is a fleet of twenty-five husky Allis - Chalmers diesel - powered Baker Bulldozers, made by the the Baker Mfg. Co., 503 Stanford Ave., Springfield, Ill., assembled at a California army post before distribution to vital points in the state's timberland.

New Pipe Clamp for Emergency Repair

Water department officials in danger areas will be interested in a new device for quickly repairing mains. The new clamp, known as the Skinner-Seal Bomb Crater Clamp, makes a tight, lasting connection between the ends of the broken main and a random piece of steel pipe, cut to appropriate length, to fill the space.



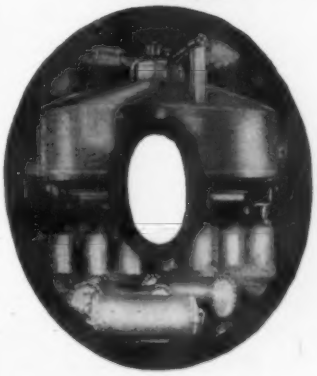
The new Skinner -Seal repair clamp

Illustration shows how connection is made between main and steel pipe at each end of gap. Left end makes connection with main; right end makes connection with steel pipe.

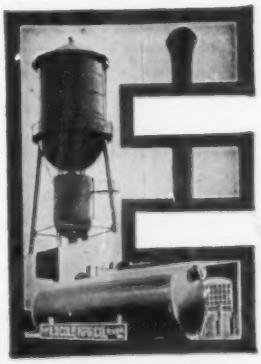
According to The M. B. Skinner Co., South Bend, Ind., prompt deliveries can be made to municipalities in probable air raid zones.

A battery of Baker Bulldozers standing ready to assist in controlling forest fires on the West Coast.

Tank Builders For Over 80 Years!



Tanks, Towers, Kettles, Kiers, Vats, Vessels, Bins, Boilers, Stacks, Standpipes and other fabricated plate-work from your specifications or ours.



Write for "Tank Talk" — 6-A, or let us figure on your requirements.

R.D.COLE MFG.CO.

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NEWNAN · · · GEORGIA

The eyes of all America are upon the United States Treasury Roll of Honor appearing in the "Payroll Savings News." For copy write War Savings Staff, Treasury Department, Washington, D. C.

NEW 10% WAR BOND DRIVES SWELL TREASURY HONOR ROLL

HOW TO "TOP THAT 10% BY NEW YEAR'S"

Out of the 13 labor-management conferences sponsored by the National Committee for Payroll Savings and conducted by the Treasury Department throughout the Nation has come this formula for reaching the 10% of gross payroll War Bond objective:

1. ***Decide to get 10%.***
   It has been the Treasury experience wherever management and labor have gotten together and decided the job could be done, the job was done.
2. ***Get a committee of labor and management to work out details for solicitation.***
   a. They, in turn, will appoint captain-leaders or chairmen who will be responsible for actual solicitation of no more than 10 workers.
   b. A card should be prepared for each and every worker with his name on it.
   c. An estimate should be made of the possible amount each worker can set aside so that an "over-all" of 10% is achieved. Some may not be able to set aside 10%, others can save more.
3. ***Set aside a date to start the drive.***
4. ***There should be little or no time between the announcement of the drive and the drive itself.***
   The drive should last not over 1 week.
5. The opening of the drive may be through a talk, a rally, or just a plain announcement in each department.
6. Schedule competition between departments; show progress charts daily.
7. Set as a goal the Treasury flag with a "T."

AS of today, more than 20,000 firms of all sizes have reached the "Honor Roll" goal of at least 10% of the gross payroll in War Bonds. This is a glorious testimony to the voluntary American way of facing emergencies.

But there is still more to be done. By January 1st, 1943, the Treasury hopes to raise participation from the present total of around 20,000,000 employees investing an average of 8% of earnings to over 30,000,000 investing an average of at least 10% of earnings in War Bonds.

You are urged to set your own sights accordingly and to do all in your power to start the new year on the Roll of Honor, to give War Bonds for bonuses, and to purchase up to the limit, both personally and as a company, of Series F and G Bonds. (Remember that the new limitation of purchases of F and G Bonds in any one calendar year has been increased from $50,000 to $100,000.)

TIME IS SHORT. Our country is counting on you to—

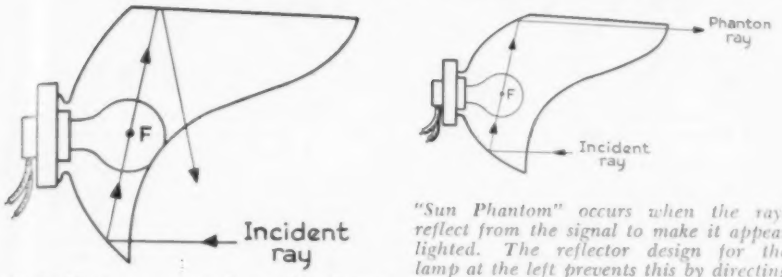
"TOP THAT 10% BY NEW YEAR'S"

EVERYBODY EVERY PAYDAY AT LEAST 10%

Save with
War Savings Bonds

This space is a Contribution to America's All-Out War Effort by THE AMERICAN CITY

Eliminates "Sun Phantom"



"Sun Phantom" occurs when the rays reflect from the signal to make it appear lighted. The reflector design for the lamp at the left prevents this by directing the incident rays away from the observer. Even when shields are provided, this phenomenon may exist as the lamp at the right demonstrates.

"Victory" Traffic Signals Show Improved Features

Traffic signals now being made by the General Electric Co., Schenectady, N. Y., show ingenuity in design. The use of critical material has been reduced greatly, yet new improvements have been effected in the design.

According to data in this company's new bulletin GEA-3844, drawn sheet steel housing is used in place of the usual sheet and die-cast aluminum. Furthermore, the lens is constructed in such a manner that it eliminates the "sun phantom"—the characteristic of a signal that makes it appear lighted when in the path of the rays of the rising or the setting sun. Reflecting surfaces are designed so that the rays striking the reflector can never be directed towards the motorist.

With this design there is no chance that the motorist will be tricked by the sun into thinking that he has a green signal when actually he has the red and when the cross traffic has the right of way.

Wood Memorial Tablets

Bronze tablets are no longer available to commemorate the men and women who have left for the services. However, the Michaels Art Bronze Co., 231 Court Ave., Covington, Ky., has developed a number of appropriate and attractive wood tablets that may be used.

These are made with expansible plates allowing additions to be made as men and women continue to join their comrades in the service. The Michaels Art Bronze Co. states that full credit will be given for the price of this tablet on the purchase of a new permanent bronze tablet at the end of hostilities.

Air Compressors with Automobile Engines

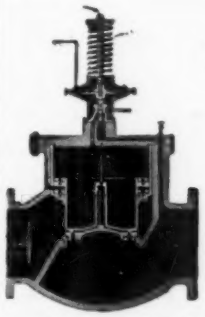
The dependability and easy maintenance of the Schramm Fordair Portable Compressors make this type of equipment of particular value to city officials who are responsible for the maintenance and repair of water works, sewers, and streets.

The compressor consists essentially of a Ford Mercury cylinder pump, plus the Schramm patented valves, heads, and intake manifolds—a compact, light-weight engine-driven compressor easily transported and low in critical materials according to Schramm, Inc., West Chester, Pa.

New Vice-President for Thornton Tandem

Bruce Gregory has recently been appointed vice-president in charge of sales and a member of the Board of Directors for the Thornton Tandem Co., Detroit, Mich. Announcement was made by A. F. Knobloch, president.

Mr. Gregory has been associated with the Thornton Tandem Co., manufacturers of four-rear-wheel-drive truck units for about a year. Previously, he was affiliated with various tire companies in their sales departments.



STOP CHECK SINGLE-ACTING ALTITUDE VALVE

★

This valve installed in the upstream line automatically maintains a uniform water level within 3" to 12" variation to prevent any tank overflow; also, by means of the internal "stop check" piston assembly, prevents loss or return of storage water back through the valve—making the valve very desirable for use where metered water is purchased, or wherever it is imperative that there be no possible return flow.

This valve may be fitted with "Differential" Control for delayed opening, if desired.

Write for Specifications

GOLDEN-ANDERSON VALVE SPECIALTY CO.

Fulton Building Pittsburgh, Pa.

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Brief, Handy Catalogs of Municipal Equipment—to help you decide what to buy for improving municipal efficiency.

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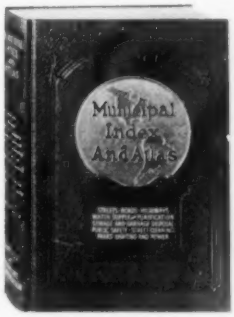
128 pages of maps and city lists, including maps of the 48 states and foreign countries, and populations and locations of all cities of the U. S. with 1,000 or more inhabitants.



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Water, Sewerage, Garbage and Valuation Problems
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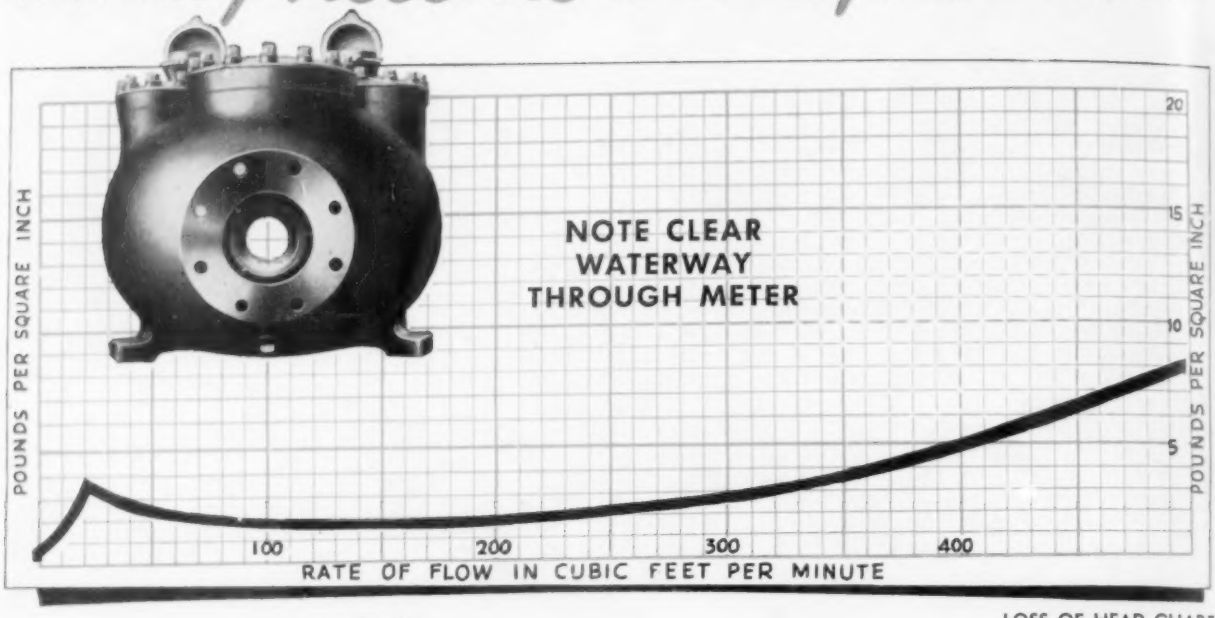

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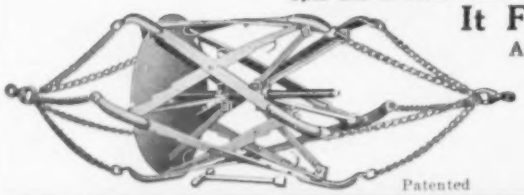

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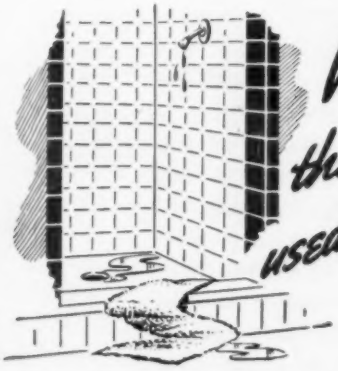

Who is the man who used this shower?

Want some clues? *He slept well last night and now he's enjoying his breakfast. He intends to call on his Baltimore customers today, spend the night here and hop a fast train (45 minutes) to Washington tomorrow morning to tackle some business there.*

Who is he? He could be you on your next trip to this territory—using this famous hotel in this famous city as your convenient headquarters in this busy area.

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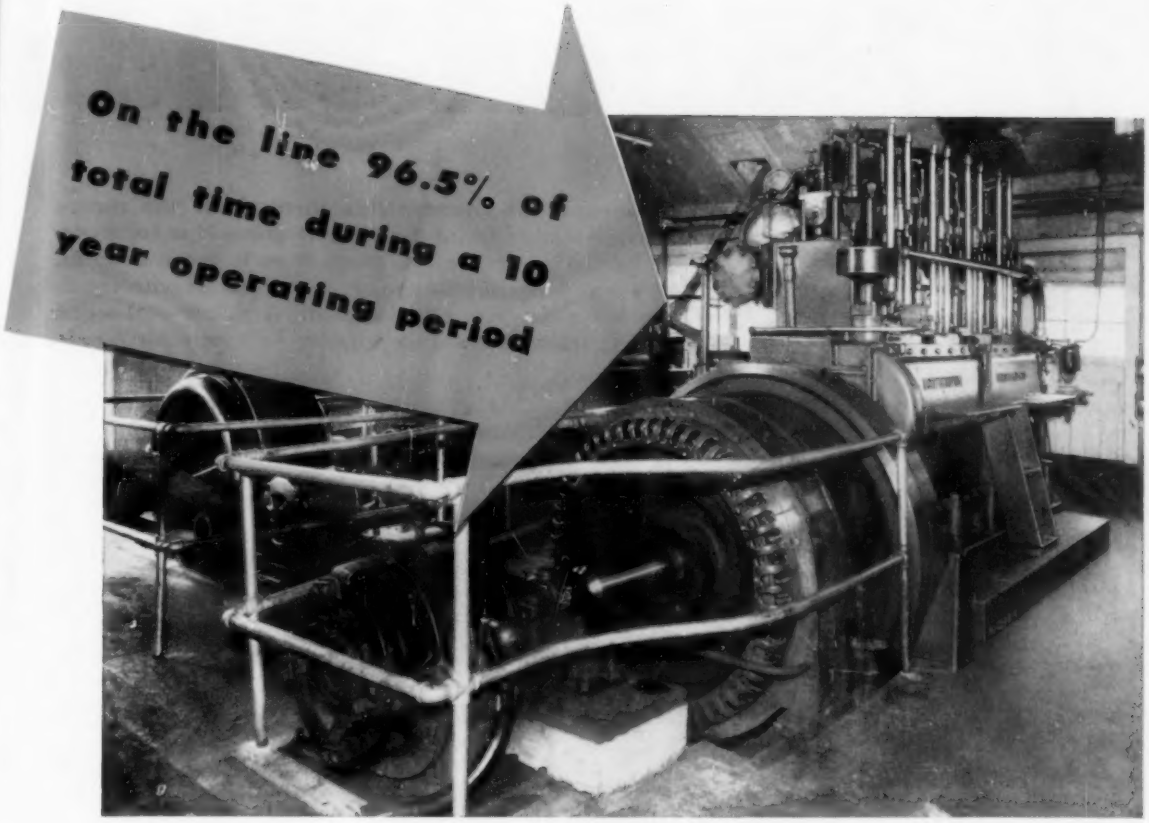

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(Including fuel oil, lubricating oil, labor, repairs and supplies)

Such a record speaks for itself, and it is typical of the performance of the hundreds of Worthington diesel and gas engines that are carrying important parts of the United Nations' war power load.

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Easy to handle—Light in weight, Transite Pipe comes in 13-foot lengths. All but the larger sizes can be handled without mechanical equipment.

Rapid Assembly—Even unskilled crews can form tight joints quickly and easily with the Simplex Coupling. No heating or pouring required.

Low Maintenance—High corrosion-resistance, a feature of Transite's asbestos-cement composition, plus lasting tight joints, helps make possible Transite's low maintenance costs.

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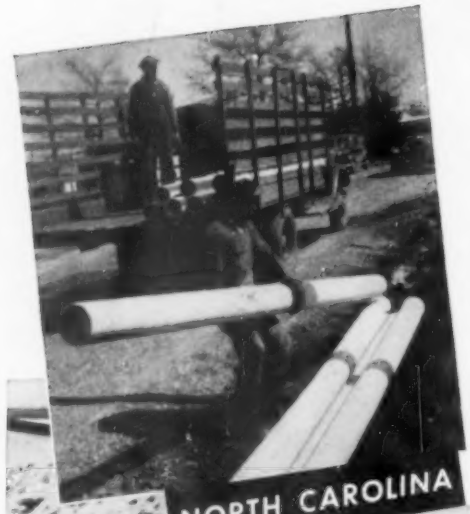

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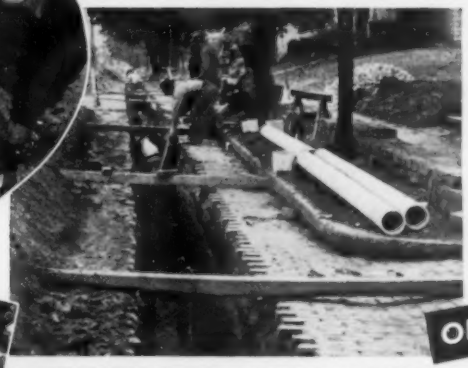

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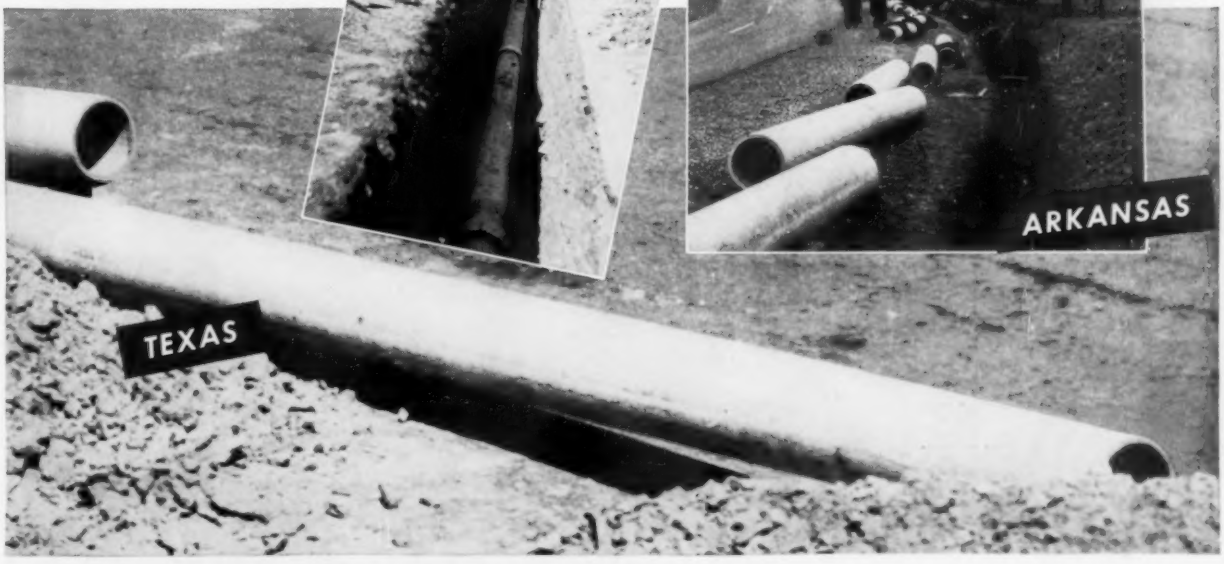

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Initial tuning simplified and made more accurate by G.E.'s iron-core inductive-tuning method. Micrometer-like adjustment, spring-locked against vibration, maintains initial accuracy — positive advantage.

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G.E.'S OUTSTANDING NEW FM EMERGENCY-RADIO COMBINATION

Two-way Mobile Combination . . . MC-1. 30 watts

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Write for our new bulletin: "Using your Buffalo-made Water Meters to Best Advantage in Wartime."

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On a Sunday morning twelve months ago, America got out of bed and yawned and breakfasted, went to church and read the funnies or took a walk with the kids. We were a big, sleepy, good-natured people who only half believed that such things as war existed.

A few hours later we were awake. The thing that made us awake was treacherous and brutal, but the shock of it was as bracing as an icy shower. We knew, at last, where we stood and what we had to do.

YOU have a broad idea of what the nation has accomplished in this first year of war. We now report to you on what the men of one company have done and are doing.

Long before last December, "Caterpillar" Diesel Tractors and Motor Graders, Engines and Electric Sets were busy on what was then called "defense" work. With the country's entry into war, "Caterpillar" production was turned wholly to war purposes, and our plants, already working three shifts a day, stepped up their output of machines. Additional space was built. More workers were trained.

Throughout this crucial year, 100 per cent of this increased "Caterpillar" production has been going into the war effort — the vast majority of it directly to the *combat forces* of the Army, Navy and Marine Corps, and for our fighting allies. On all the world's battlefronts these machines are right in the thick of the struggle for freedom. "Caterpillar" Diesel equipment is clearing beachheads for attack troops, hauling big guns, building and repairing landing fields, drilling wells and pumping water. It is powering naval craft and generating current for lights and communications, afloat and ashore. But our report would be far from complete if it dealt only with combat activities. Here at home, thousands of older "Caterpillar" machines have been performing what appears to be a miracle. With no new machines coming from the factory to replace them — with fewer men to do the vital wartime jobs, and with heavier loads and longer hours a necessity — they have stood up under grueling punishment, month after month. In industry and construction, in mines and lumber camps and on the farms, "Caterpillar" Diesels are making a mighty contribution to the war effort.

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With a large supply of replacement parts in their stock rooms, and with complete service facilities available night and day, "Caterpillar" dealers everywhere are pledged to keep "Caterpillar" Diesel Tractors, Graders, Engines and Electric Sets delivering all of the long life and rugged dependability that are built into them — until victory is won.

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Buy War Bonds and Stamps. Help win the war for FREEDOM.

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The American City

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The victory program has created many puzzling problems for city officials, but none is more serious than the providing of public improvements required by expanding war industries and the maintenance of vital municipal services, despite all difficulties in securing needed equipment and materials. Some of the companies listed below, whose advertising you will find in this issue of THE AMERICAN CITY, may not be in a position to fill your immediate requirements, due to their part in the victory program. Nevertheless, they will be glad to hear from you at any time and to cooperate with you in every way possible in maintaining the efficiency of your municipal services.

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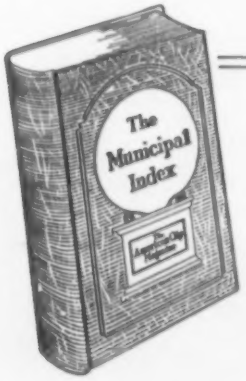
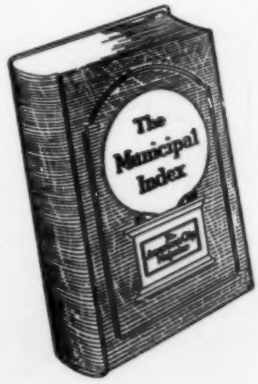


In addition to the advertisements which will be found in this issue of THE AMERICAN CITY on the pages as indicated above, condensed catalogs of many of these manufacturers will be found in THE MUNICIPAL INDEX, the big annual reference volume for city, town and county officials published by THE AMERICAN CITY, 470 Fourth Ave., New York.



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A DEPENDABLE SELF-CAULKING JOINT COMPOUND FOR CAST IRON BELL AND SPIGOT WATER MAINS

HYDRO-TITE is a self-caulking sulphur base jointing compound used to joint bell and spigot cast iron water mains and soil pipe. It comes in powder form which insures uniformity and quick melting.

When poured into a joint, HYDRO-TITE immediately solidifies upon contact with the metal and bonds to both the surfaces of the bell and the spigot for the entire depth of the joint. It requires no caulking and after pouring a joint, water pressure may be immediately applied.

HYDRO-TITE is easy to use, no skill being required to make joints that are tight from the start. Joints made with HYDRO-TITE will stand any pressure the pipe will stand.

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USED LIKE BRAIDED JUTE WILL NOT BREED BACTERIA

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FIBREX was designed for use with Hydro-Tite and other self-caulking compounds, but is entirely suitable also for joints made with lead, and for Sani-Tite and other asphalt sewer joint compounds. Thousands of pounds of Fibrex are already in service on water lines throughout the country.

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Even without the purchase of additional equipment, some plants have found it possible to employ their W&T Chlorinators to reduce the filter load and supply safe and acceptable water at rates above the normal capacity of the plant. In other cases, Emergency Chlorinators have helped to protect supplies for which permanent treatment equipment was not immediately obtainable.

Distribution systems are being protected by longer-lasting residuals obtained with Chlorine-Ammonia treatment. Breakpoint Chlorination is being employed in other communities, permitting supply sources which were previously considered unavailable to be safely used.

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SA-143

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WALLACE & TIERNAN CO., INC.

MANUFACTURERS OF CHLORINE AND AMMONIA CONTROL APPARATUS

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THE AMERICAN CITY

Volumes 58-59

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